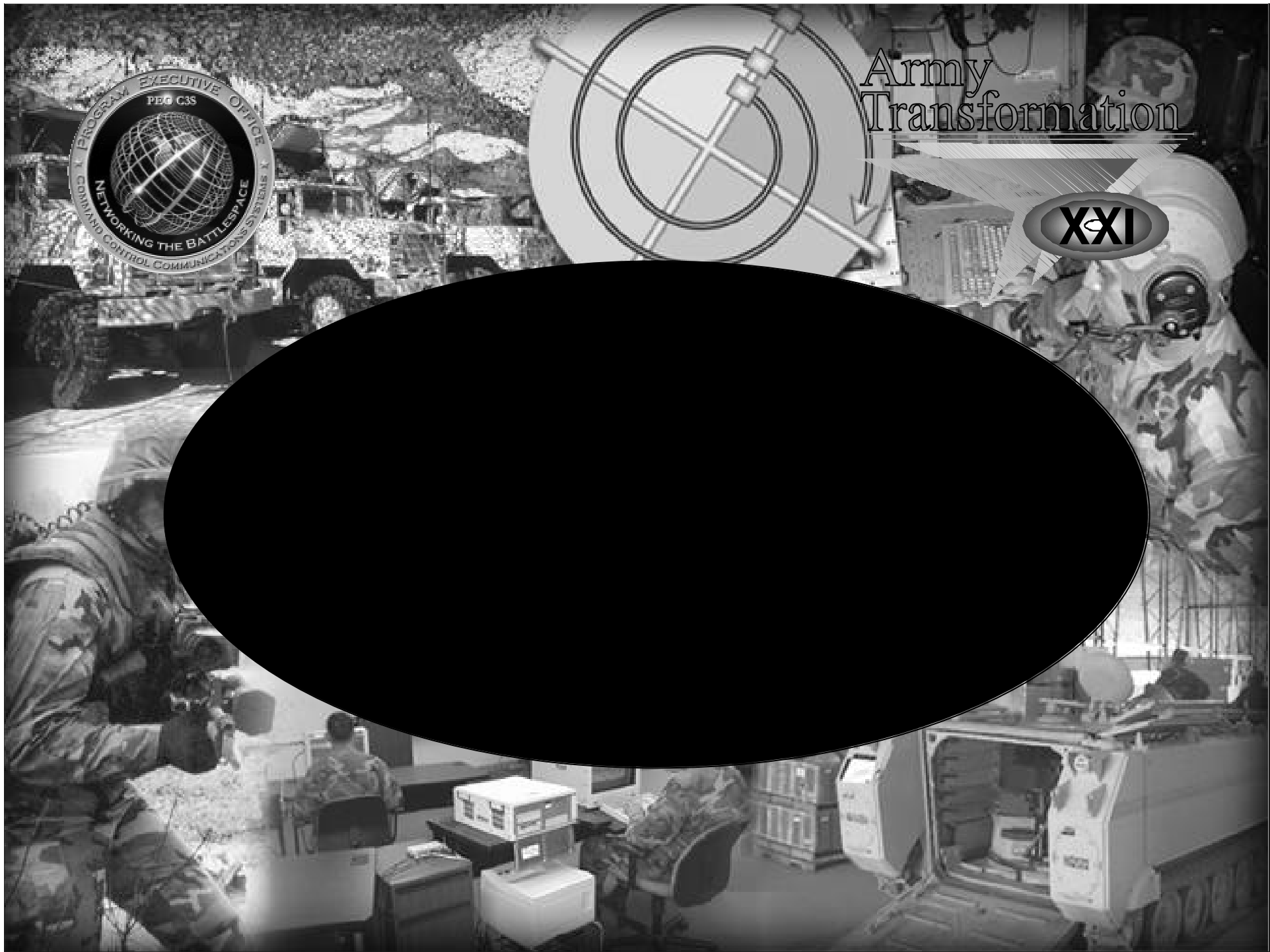




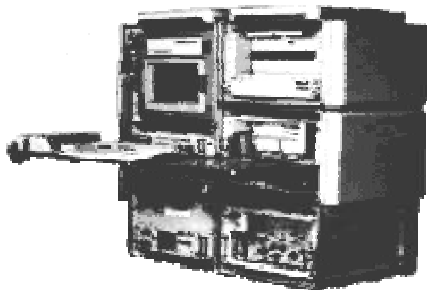
Report Documentation Page		
<b>Report Date</b> 18062001	<b>Report Type</b> N/A	<b>Dates Covered (from... to)</b> -
<b>Title and Subtitle</b> Army Battle Command System	<b>Contract Number</b>	
	<b>Grant Number</b>	
	<b>Program Element Number</b>	
<b>Author(s)</b>	<b>Project Number</b>	
	<b>Task Number</b>	
	<b>Work Unit Number</b>	
<b>Performing Organization Name(s) and Address(es)</b> Program Executive Office	<b>Performing Organization Report Number</b>	
<b>Sponsoring/Monitoring Agency Name(s) and Address(es)</b> NDIA (National Defense Industrial Association 2111 Wilson Blvd., Ste. 400 Arlington, VA 22201-3061	<b>Sponsor/Monitor's Acronym(s)</b>	
	<b>Sponsor/Monitor's Report Number(s)</b>	
<b>Distribution/Availability Statement</b> Approved for public release, distribution unlimited		
<b>Supplementary Notes</b> Proceedings from Armaments for the Army Transformation Conference, 18-20 June 2001 sponsored by NDIA.		
<b>Abstract</b>		
<b>Subject Terms</b>		
<b>Report Classification</b> unclassified	<b>Classification of this page</b> unclassified	
<b>Classification of Abstract</b> unclassified	<b>Limitation of Abstract</b> UU	
<b>Number of Pages</b> 58		



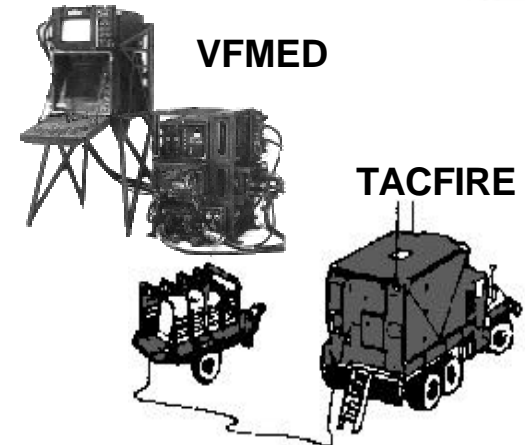
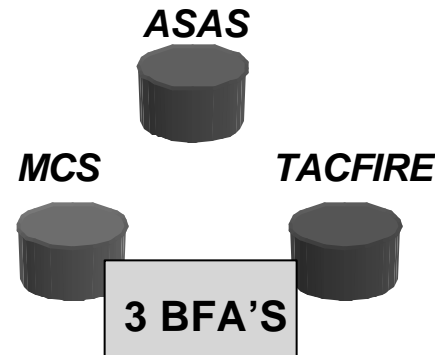


# Army Battle Command

*circa 1989...*



MCS Version 9



- Independent Systems - *No Horizontal Integration or Data Exchange*
  - *Unique HW & SW - Stovepipe Requirements*
  - Independent Development - *Unsynchronized Fielding*
- Separate Communications Intranets With Little Interaction
  - Point to Point - *Analog Traffic*



AN/TSC-85

These systems:

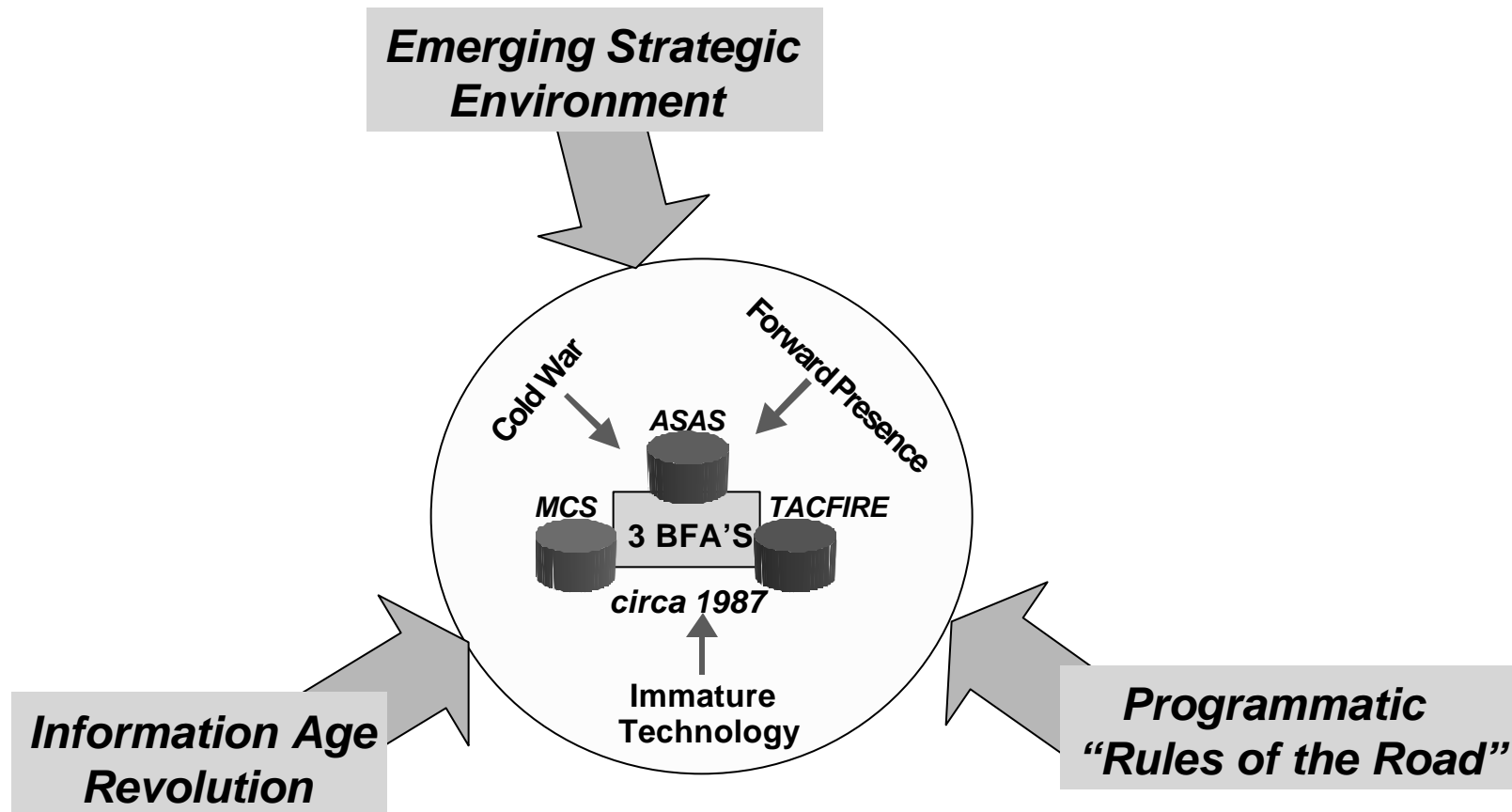
- Reflected contemporary “state of the art” technology
  - Were built in response to a geopolitical environment dominated by a bipolar, superpower rivalry
  - Supported a forward deployed, robust force
- but served that force well***



ASAS VAX 750R  
being removed  
from shelter  
*circa 1989*



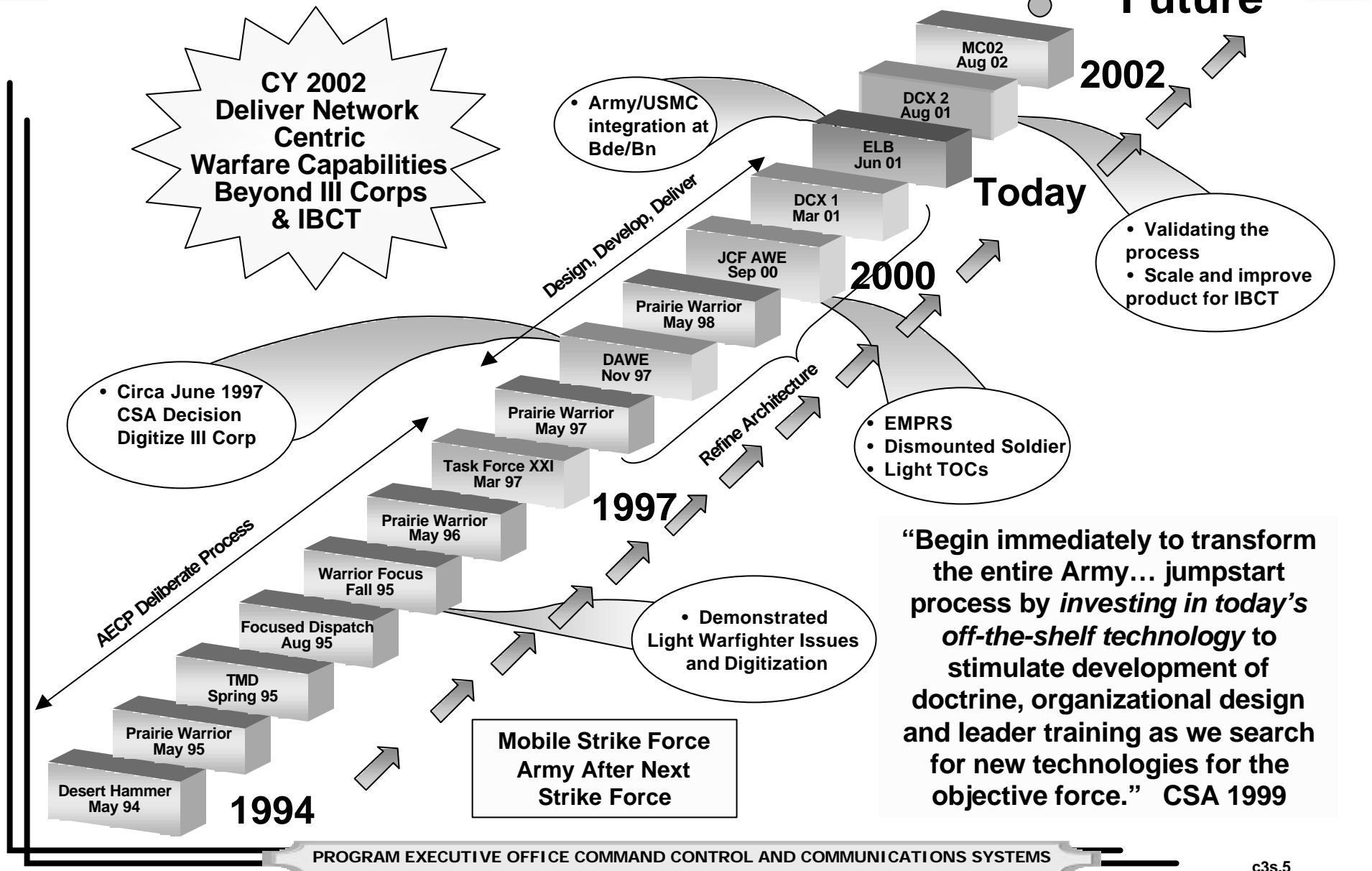
# But “New Forces” emerged...



*“These forces... exert tremendous new pressure on the ... environment, superseding the old forces as the focus of planning.”* Unleashing the Killer App

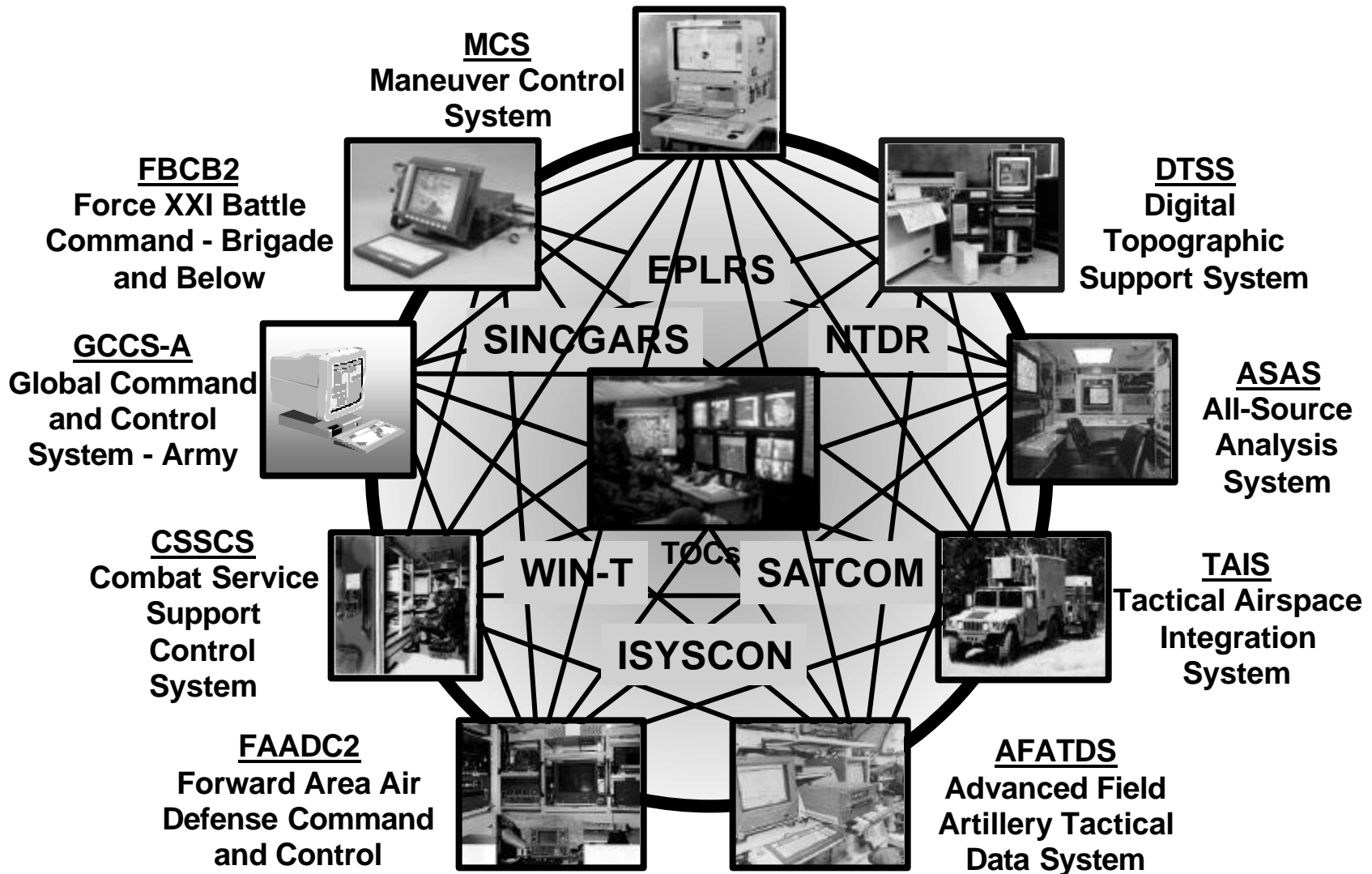


# Continuing on the Road to Transformation



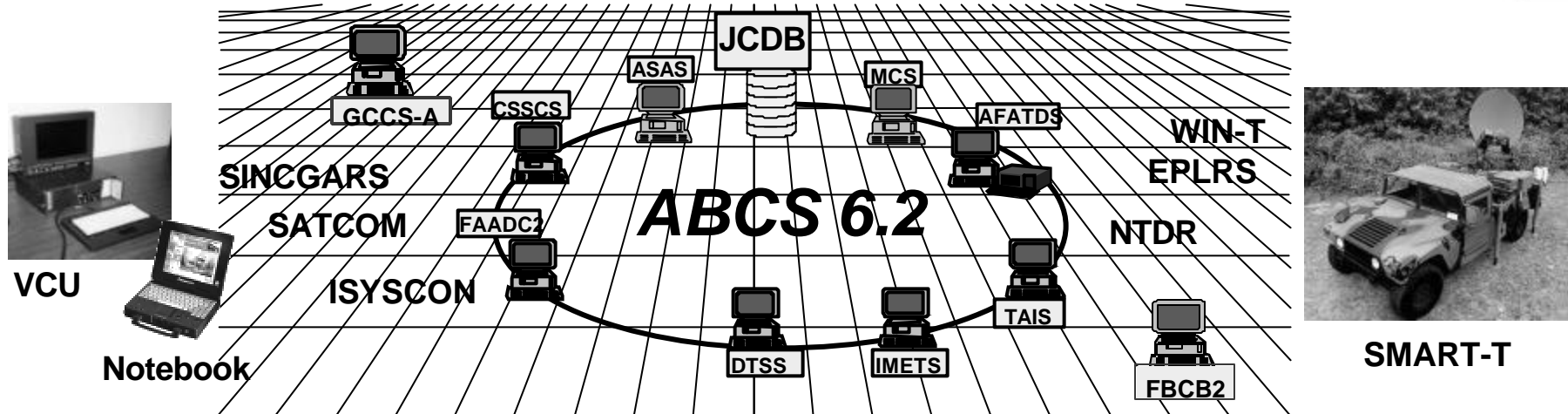


# THE ARMY BATTLE COMMAND SYSTEM





# ABCS circa 2001...



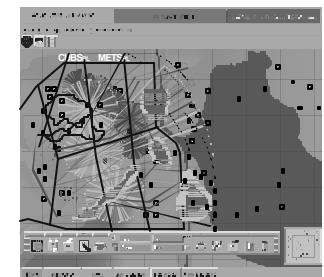
- *Common look and feel - Common hardware - Common infrastructure*
- Common tactical picture with *integrated*, interactive overlays, common map application & commander-imposed filters
  - One linked internet enabled by commercial gateways
    - Interoperable collaboration tools
    - Database to database exchanges
      - *Level 6 DII COE compliance*
      - Lift reduction of 120 tons
      - 20k Watt power reduction

*... essentially a major overhaul of the software infrastructure....*

*DUSA (OR) Independent review of the Army's Digitization Program  
Sept 2000*



**A2C2S  
Configuration**

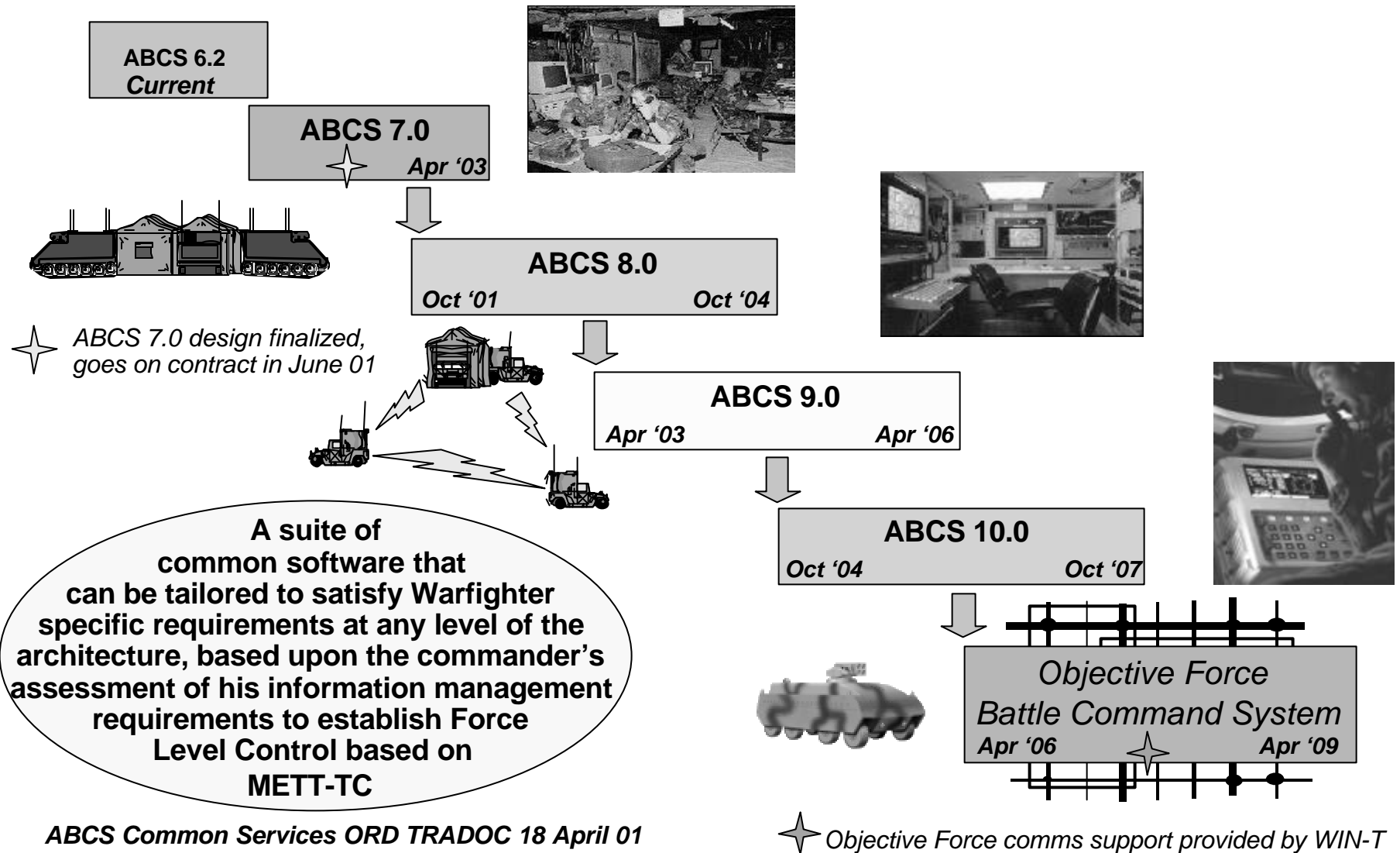


**Common Tactical  
Picture**





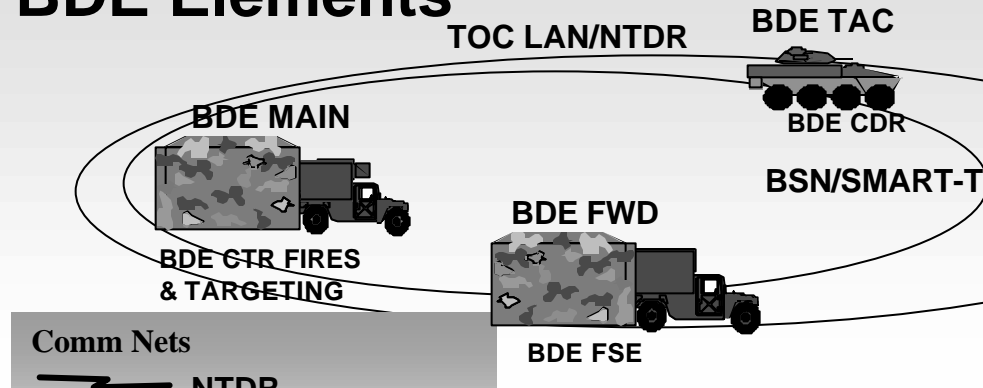
# “Army Battle Command” Developmental Timeline





# Fire Support Architecture

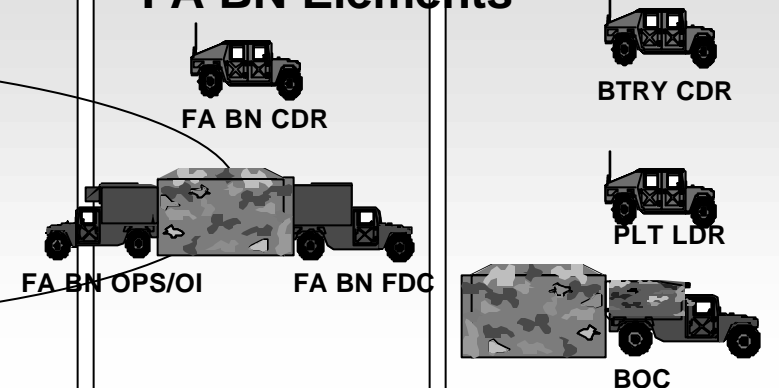
## BDE Elements



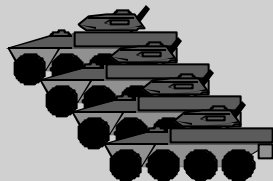
### Comm Nets

- NTDR
- Voice
- HF
- EPLRS/FBCB DATA
- SINGARS TCIM

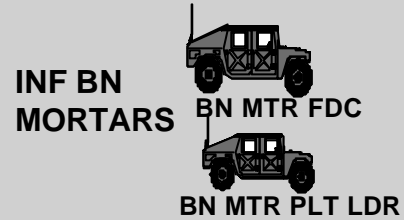
## FA BN Elements



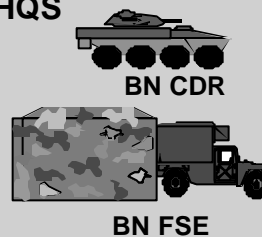
### INF BN 120 MM MTR



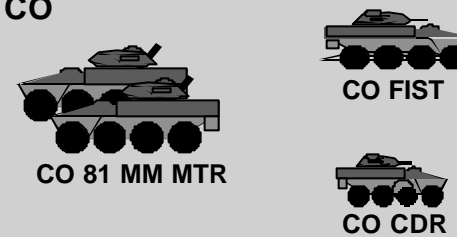
## INF BN Elements



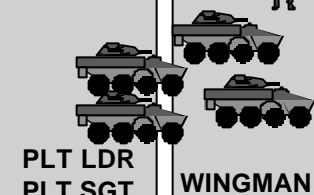
### BN HQS



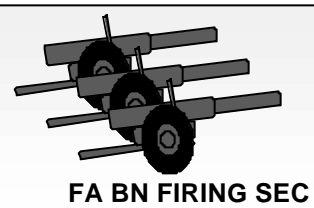
### CO



### PLT



DISMOUNTED



FA BN FIRING SEC

- Upper Tactical Internet – NTDR
- Lower Tactical Internet - EPLRS
- SINGARS TCIM FS Data
- SINGARS Voice
- HF Voice



# Meeting the Future Expectations of the Warfighter

***As suggested by the TRADOC Objective Force Maneuver Unit of Action Operational and Organizational Concept***

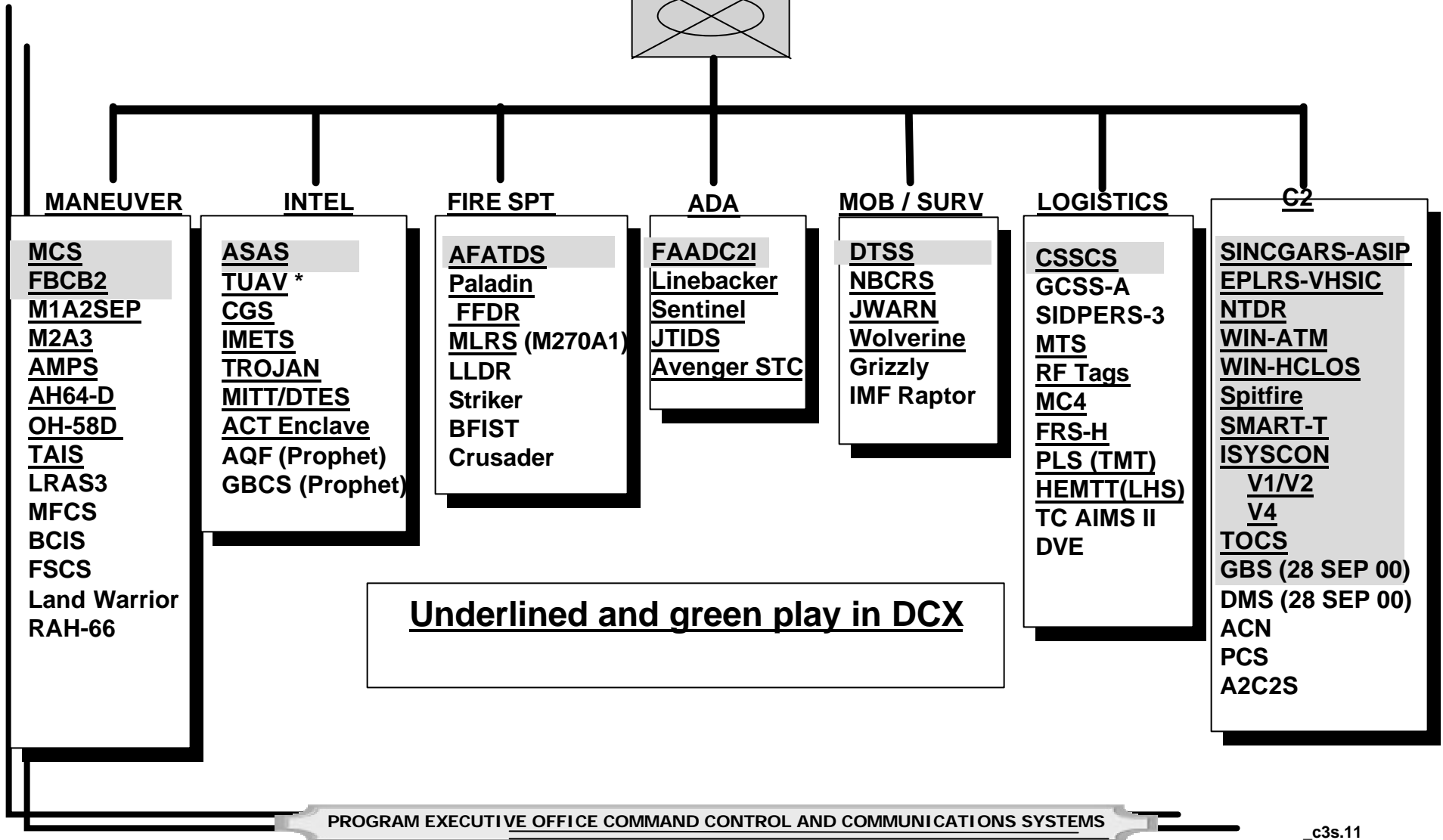
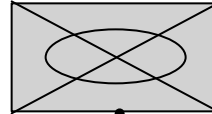
## ***A C2 system that enables/provides***

- ***Interoperability with legacy, joint and coalition systems***
- ***Planning and rehearsal from alert through employment***
- ***Continuous assessment and dynamic synchronization during execution***
- ***Distributed databases, tailorable to mission needs, that support a common operational picture***
- ***Multi-echelon collaborative planning***
- ***Self synchronization of peer units***
- ***Beyond line-of-sight communications - in depth***
- ***Distributed, mobile TOCs - virtual staffing***
- ***Tailorable, interactive, dynamic displays with intuitive interfaces***
- ***Access to any relevant information in the Global Information Grid***
- ***Network assurance with low probability of detection and/or exploitation***
- ***Real time terrain visualization***



# DCX Systems List

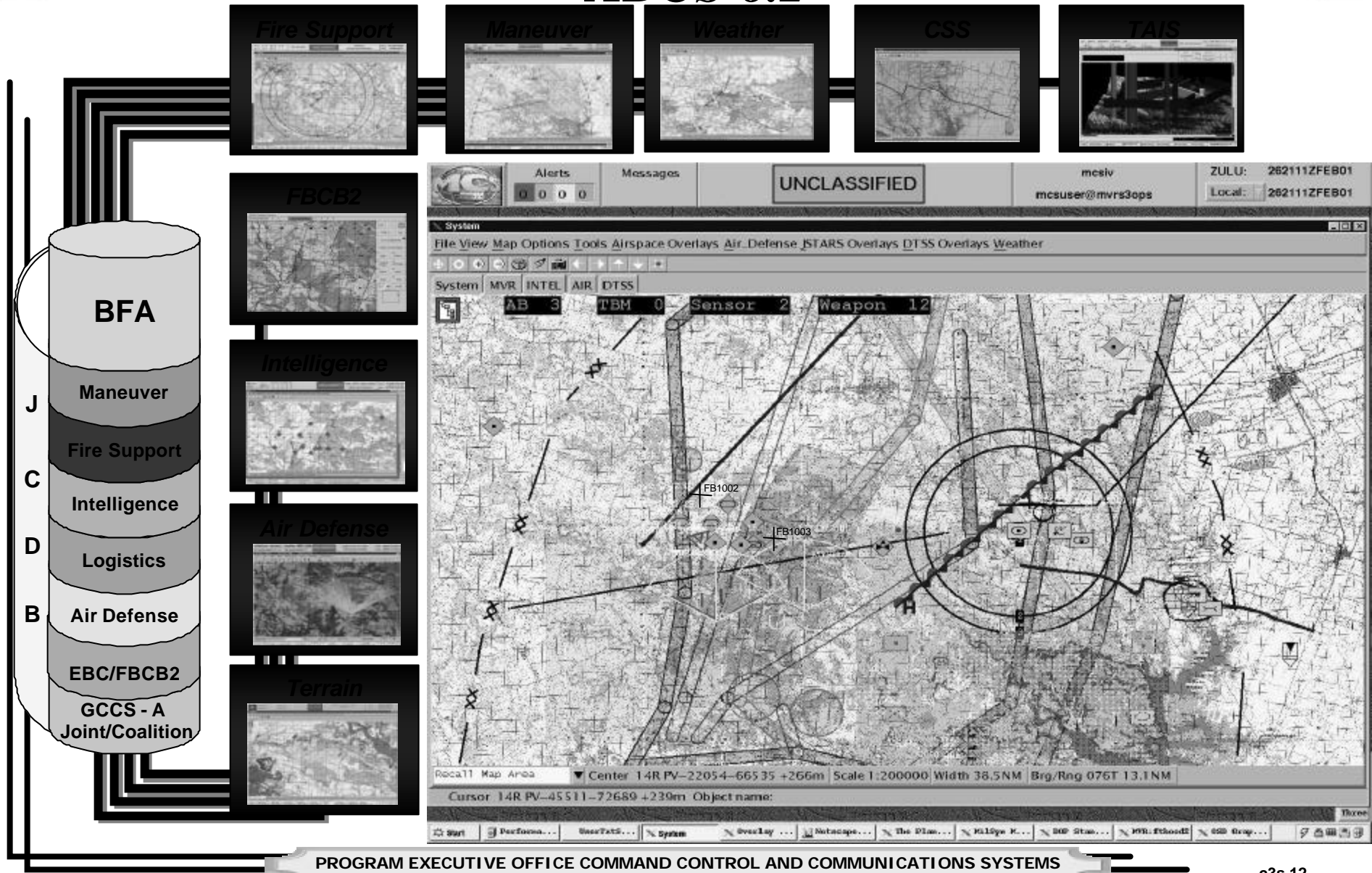
XX





# Creating Common Tactical Picture

## ABCS 6.2



## “Scenario”

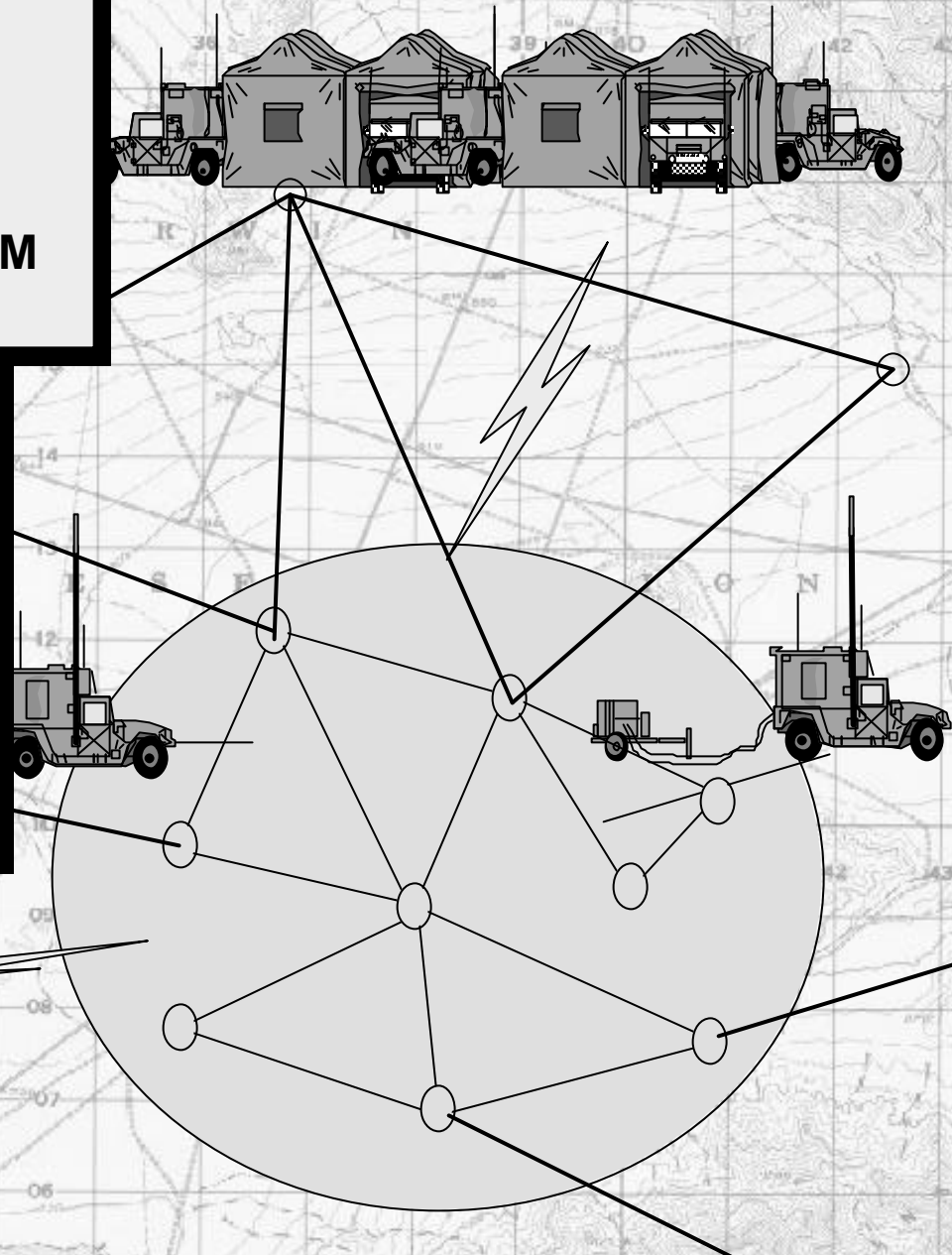
- Units moved beyond FM Voice range
- Passing of digital traffic and Situational Awareness of friendly forces continued over networked system
- Maintained “command” beyond FM voice range with FBCB2

### **Spoiling Attack –**

- A platoon leader was given a mission to conduct Spoiling Attack.
- Without a prepared plan, platoon used current information on FBCB2 to identify routes which offered maximum cover and concealment. Platoon obtained excellent fire positions with superior line of site.
- Enemy caught off guard and completely destroyed.



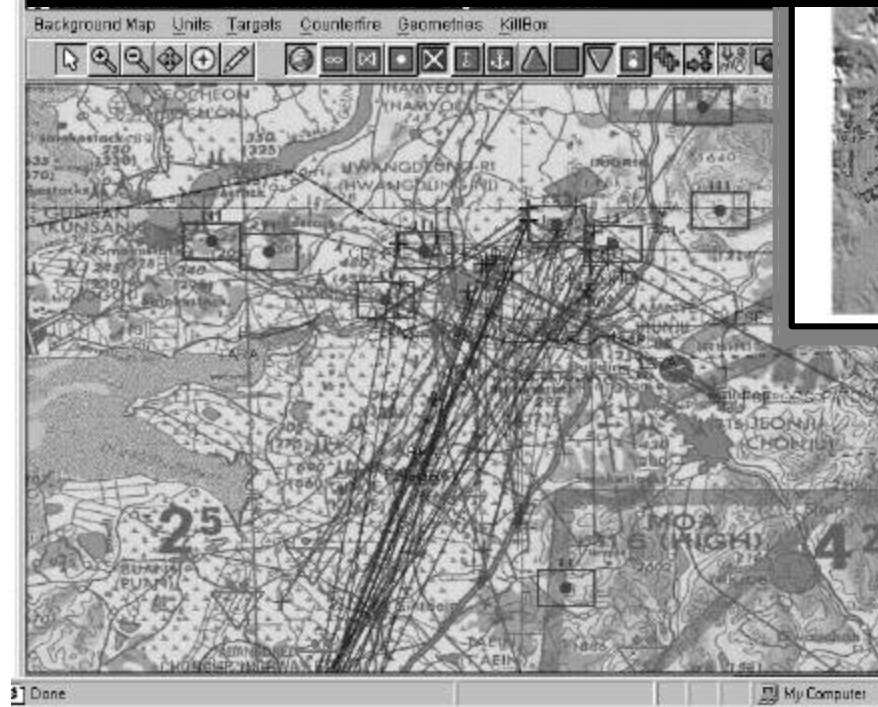
## **Enablers: FBCB2 and the Network**



## “Scenario”

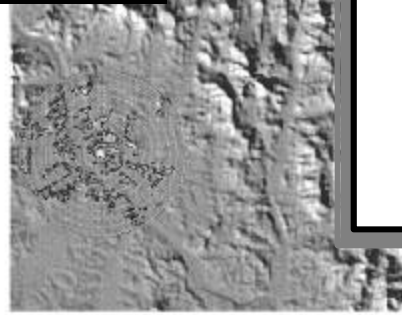
- Counterbattery radars detected incoming artillery- displayed on AFATDS
- DTAC Staff used DTSS to Identify potential OP locations from where enemy FO's could observe fires
- UAV Confirmed enemy elements
- Blue Artillery Destroyed enemy observer

## Enabler: AFATDS & DTSS Synergy “Finds” Enemy Observers

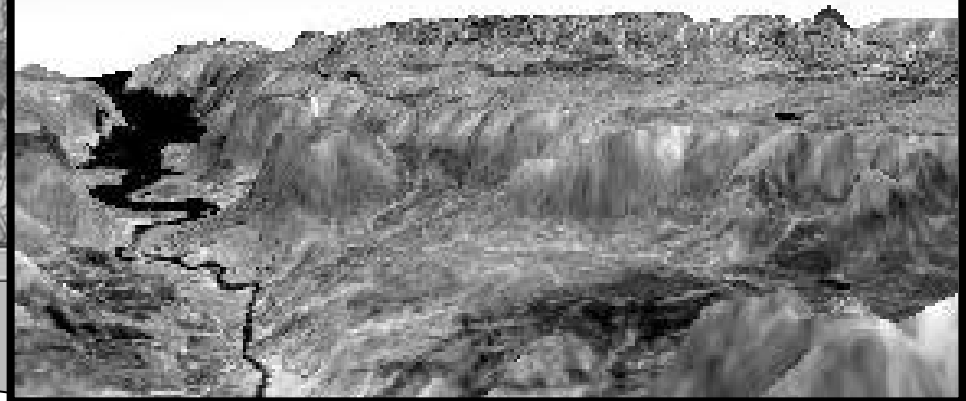
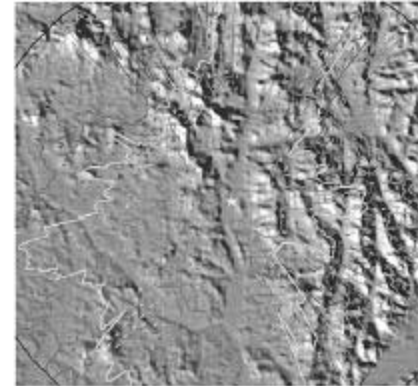


Counterbattery

Masked Area Plot  
Relief Background



Target Acquisition  
Shaded Relief Background



DTSS Views



# Open Issues from DCX-1

1. Improve Red SA distribution/presentation - refining tools, providing resources to IntelCen to support TTP development and training
2. Enhance network performance and robustness
  - Ensure that TOC-TOC radio network (NTDR) can scale to 4 brigade division
  - Improve C2 message completion rate
3. Implement architecture modifications, to address:
  - Need for additional mission
  - Need for DMS services
4. Improve performance of ABCS when contributing to participating in COT
5. Improve graphics/overlay exchange between systems, especially MCS & FBCB2
6. Fix Digital LOGSTAT reports and interface between FBCB2 and CSSCS
7. Improve network startup simplification
8. Improve ATDR
9. Improve systems



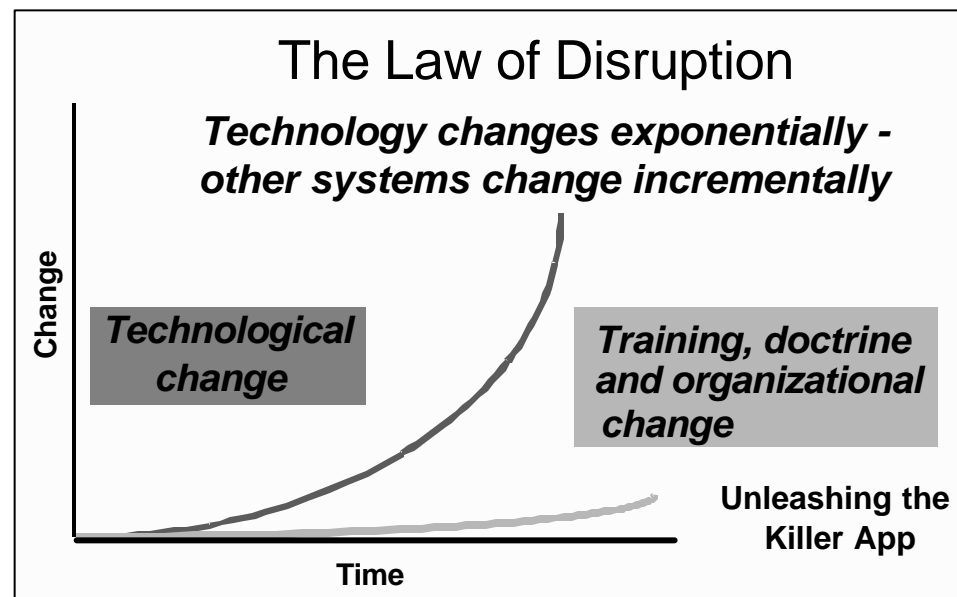


# Summary

## ..... Change must be Holistic

***“The real power of digitization will not be realized until those manual processes are replaced with new ones that reflect the addition of digitized systems through all echelons.” DUSA (OR) Independent Review of the Army’s Digitization Program Sept 2000***

***“... technology misapplied within an organization only guarantees failure”***  
**Lifting the Fog of War**

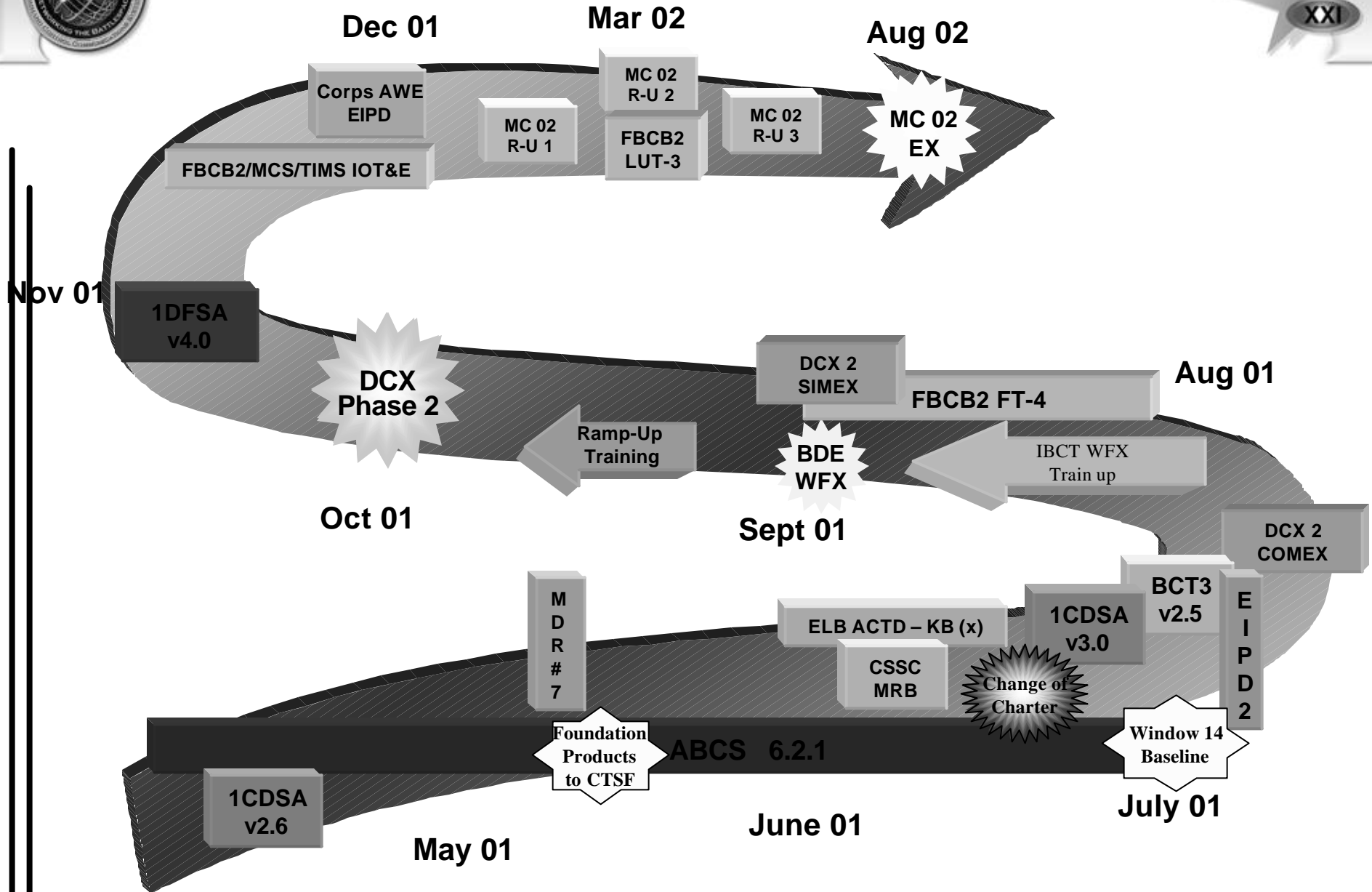


***There must be a “dynamic convergence of the technological forces with the organizational and contextual forces.”***  
**ARI Newsletter Summer 99**

***“Big changes in military capabilities took place when new weapons or other military equipment came into use along side equally pronounced shifts in tactics, doctrine and military organizations”***  
**Lifting the Fog of War**



# PEO-C3S Near Term Events



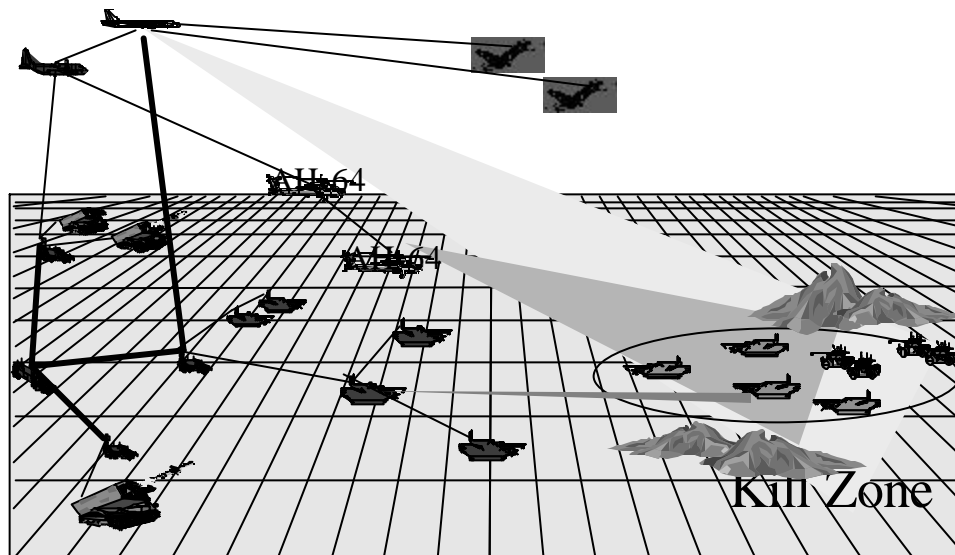


# Army Digitization Backup



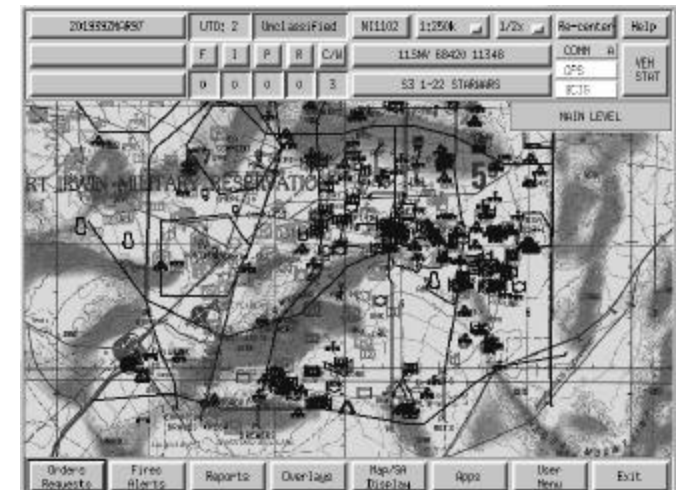
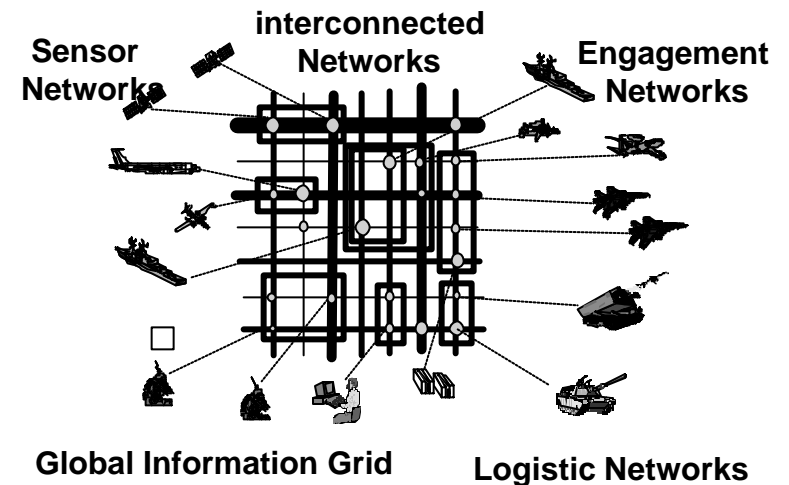
# Army Digitization

## Substituting Information for Forces



### *Increased Battlespace Awareness*

- Where Am I?
- Where Are My Buddies?
- Where Is the Enemy?





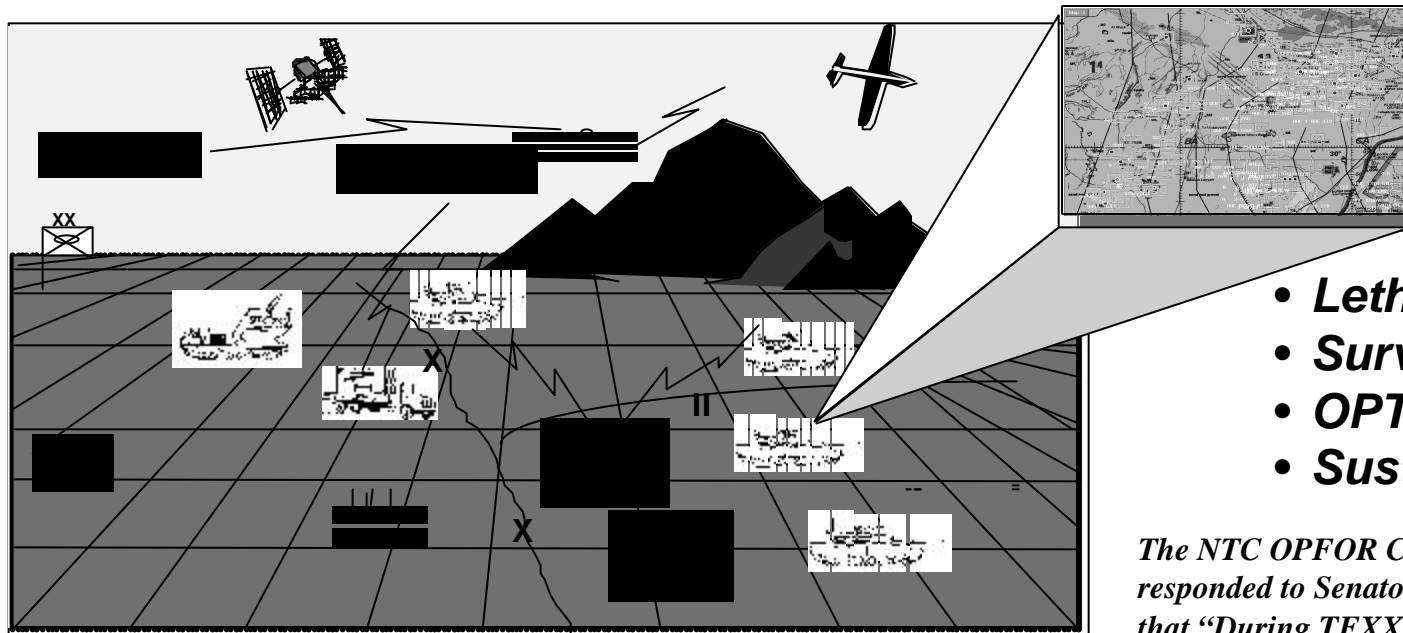
# What is Battlefield Digitization?

## *A Top Level View*

Army  
Transformation

XXI

Digitizing the Battlefield is the application of information technologies to acquire, exchange, and employ timely information throughout the battlespace, tailored to the needs of each decider (commander), shooter, and supporter. . . allowing each to maintain a clear and accurate vision of common battlespace necessary to support both planning and execution.<sup>1</sup>



- **Lethality**
- **Survivability**
- **OPTEMPO**
- **Sustainability**

**From Strategic Base assets to the Tactical Level  
within the Army and within Joint/Combined operations**

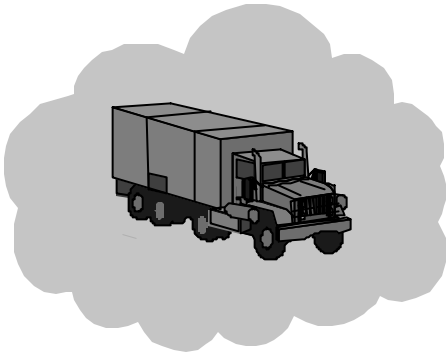
*The NTC OPFOR Commander responded to Senator Glen in June 1997 that "During TFXXI, the digitized Brigade at the National Training Center successfully controlled three times the terrain - at a higher OPTEMPO than other non-digitized Brigades."*

<sup>1</sup> Reference: Special Task Force 2 on Battlefield Digitization



# Self Forming, Self Healing Network

## Pre- Legacy



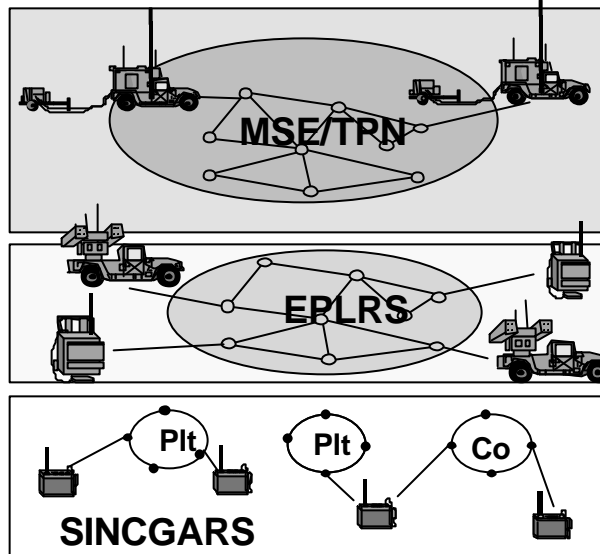
**TTC-39**

**Deterministic Routing**

pre-planned, pre-defined,  
fixed path routes

**Self Forming,  
Self Healing**

## Legacy



*Three separate internets and  
networks with little interaction  
Required manual relay of information*

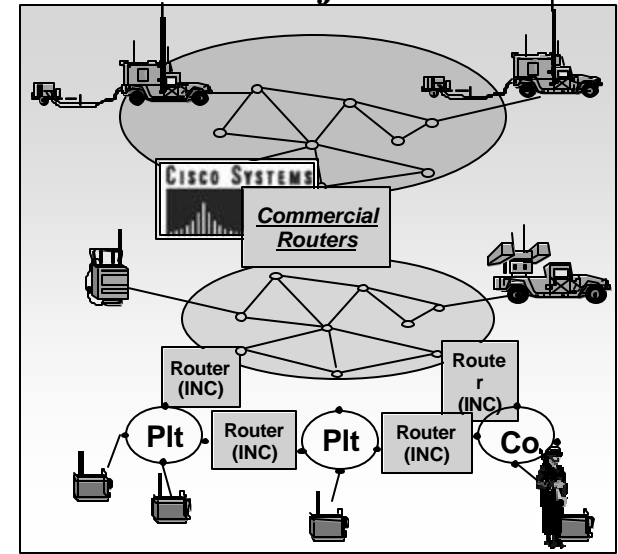
**MSE**

**Flood-search Routing**

by message, flood network  
to define best path

## Transformation

*IBCT and Objective Force*



*ONE seamless, pervasive intranet  
commercial router based*

*SINGARS - upgraded "data capabilities"*

*EPLRS - throughput increased*

*MSE - Commercial ATM capable*

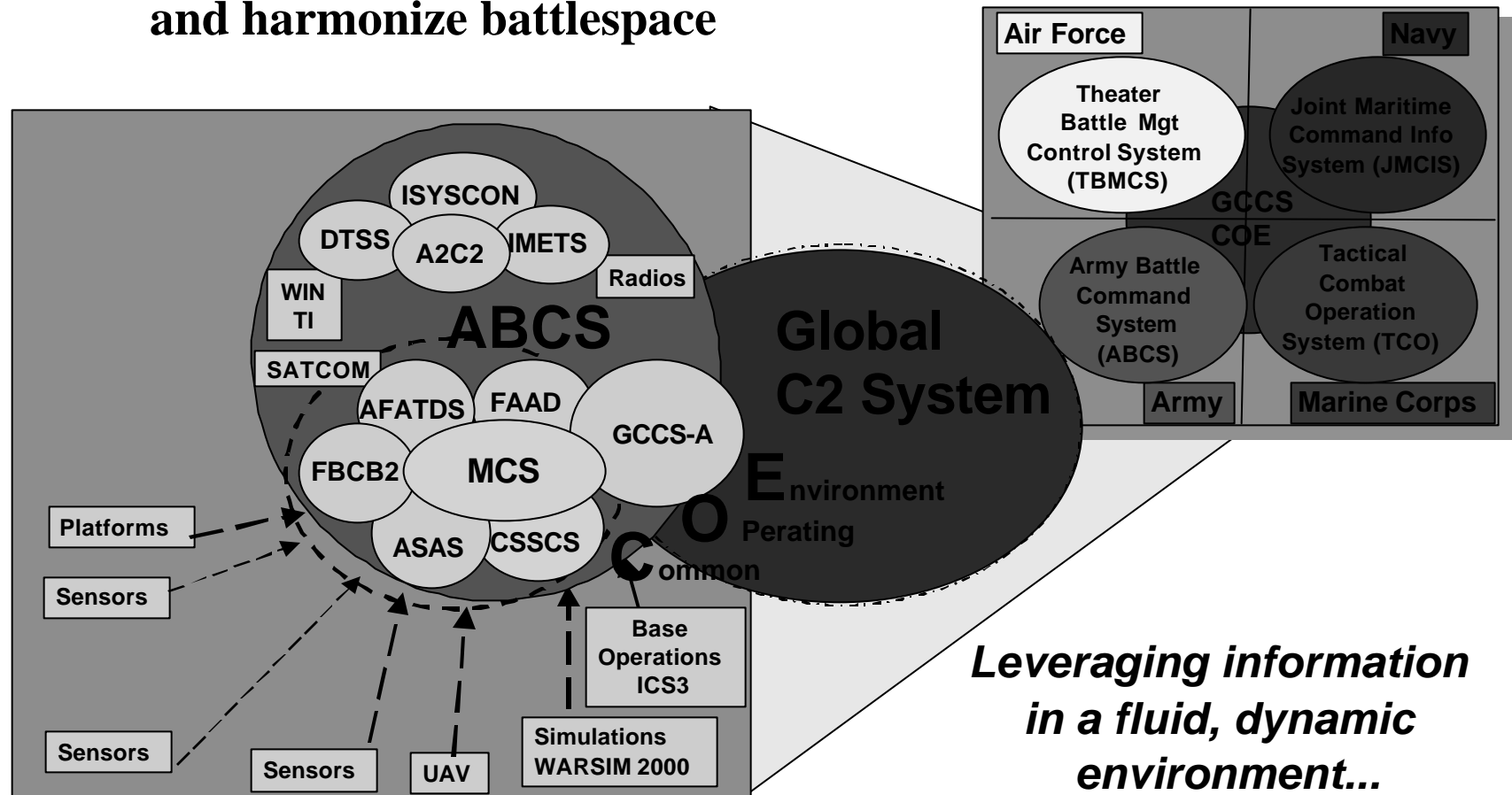
**IP - Optimal Path Routing**

assured delivery, self-routing,  
multi-path



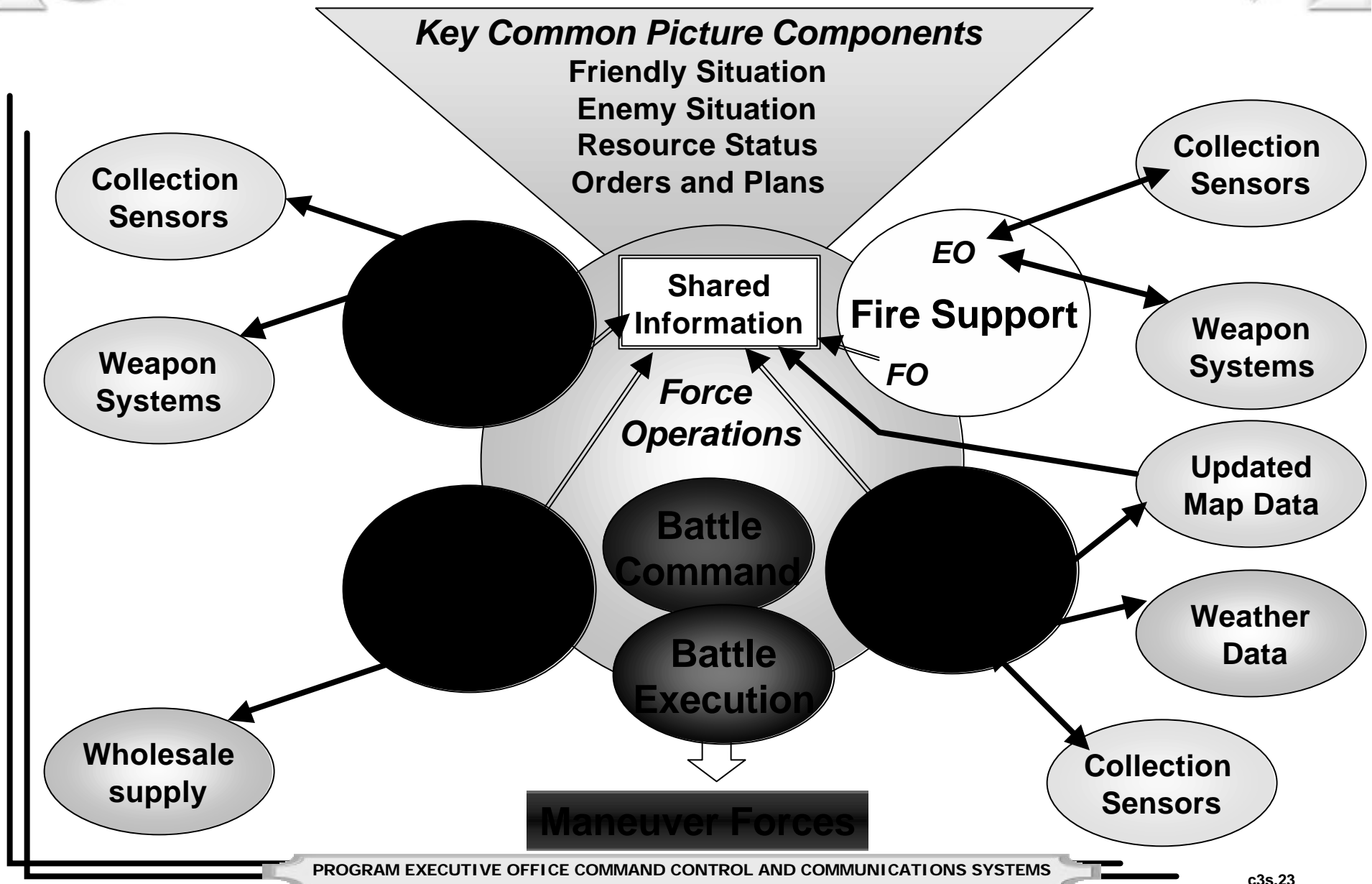
# ABCS -- the Big Picture

- Commander-centered
- Will allow the commander to clearly see and harmonize battlespace



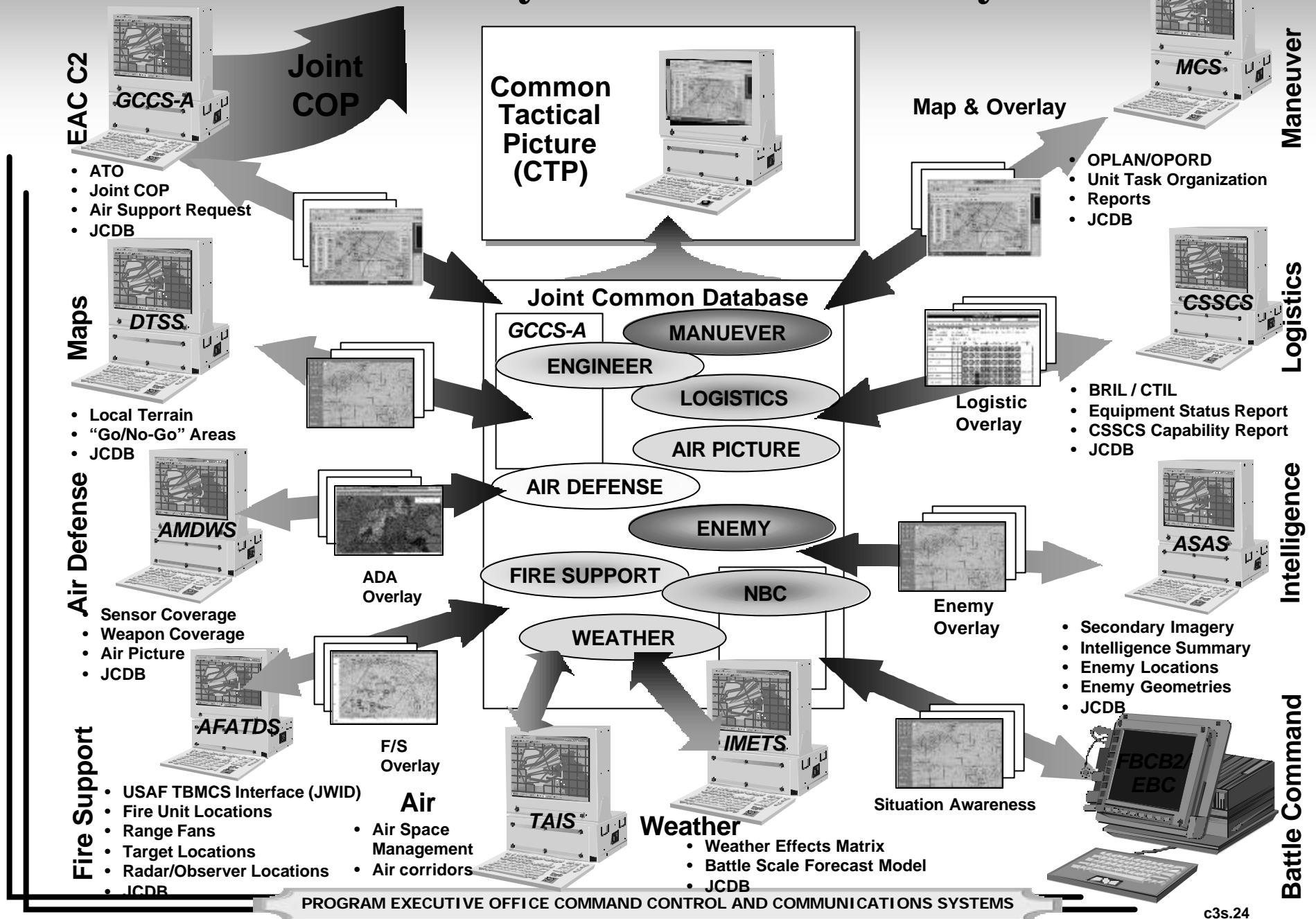


# Engagement Operations and Force Operations





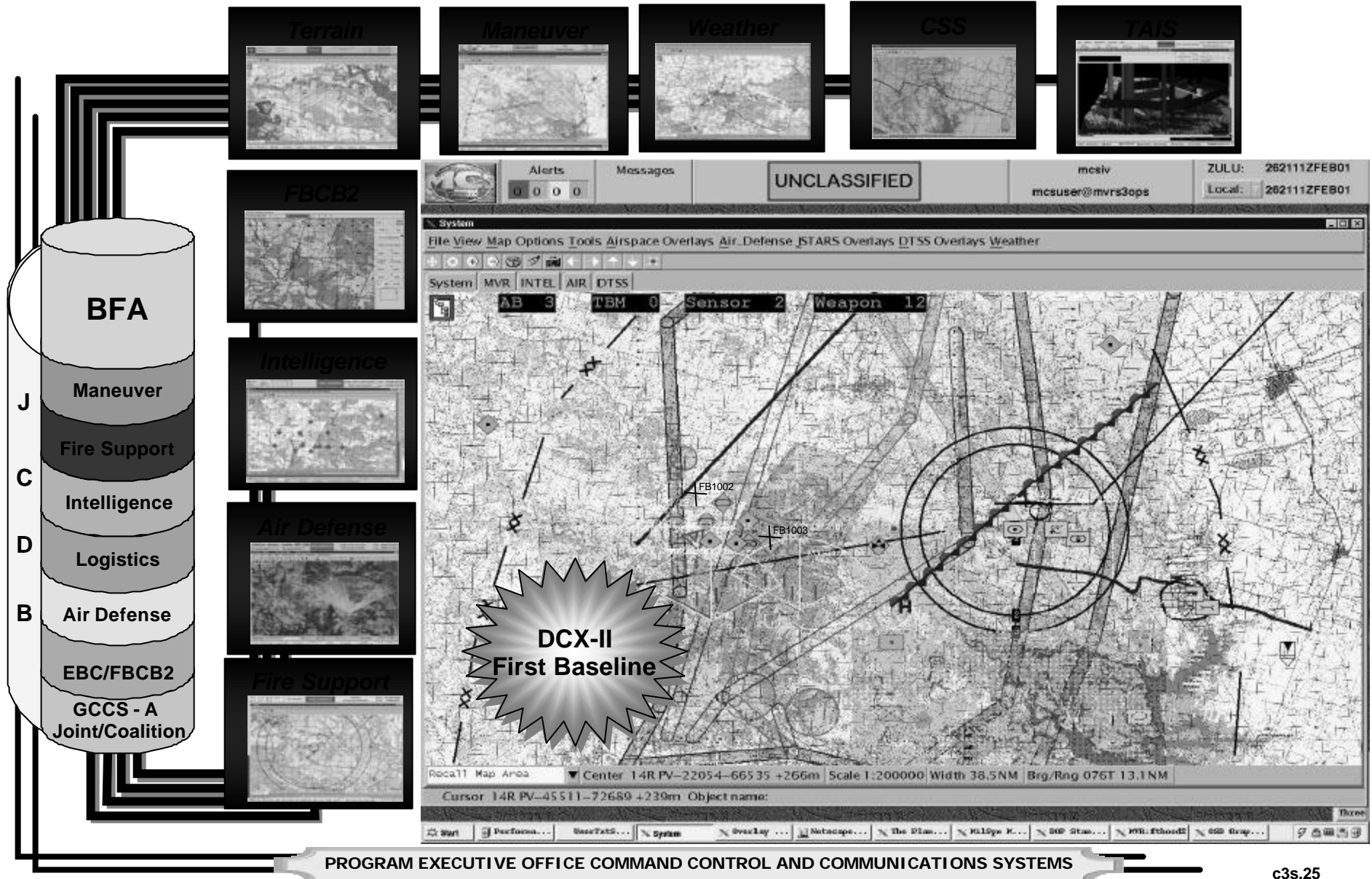
# The US Army Battle Command System





# Creating Common Tactical Picture

## ABCS 6.2 at DCX-I



FBCB2 Display Process

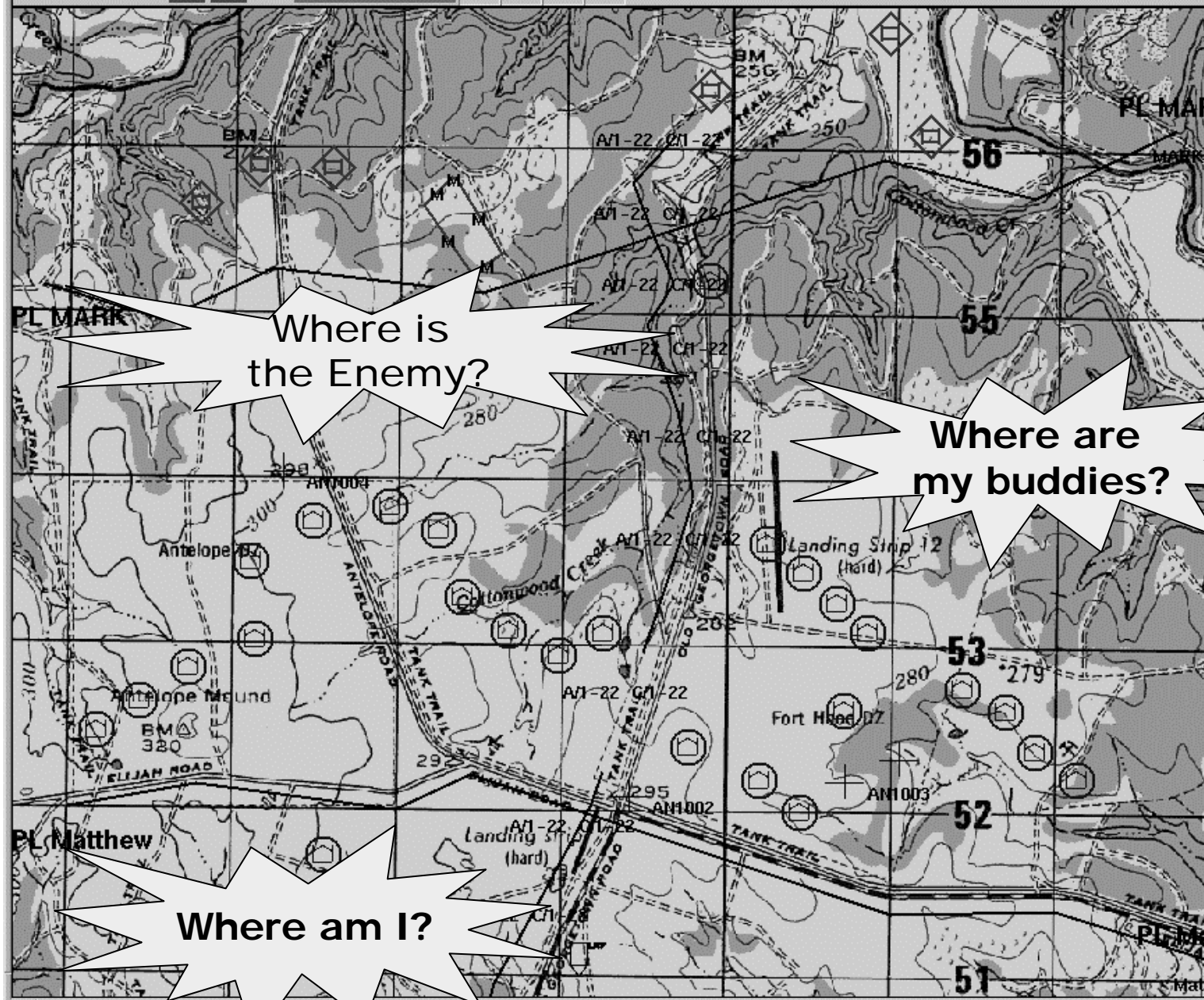
# FBCB2 DISPLAY

211131ZSEP1999

R R

Unclassified

0 0 0 0



Auto Center

FIPR 0...

Top...

S3OFF/TOC/1BDE/4ID

14RPV 09432 52170

F1

F2

Filters...

F3

Combat Msgs...

F4

Messages...

F5

Status...

F6

Admin...

F7

Apps...

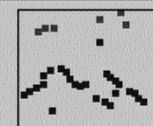
F8

Help

2x

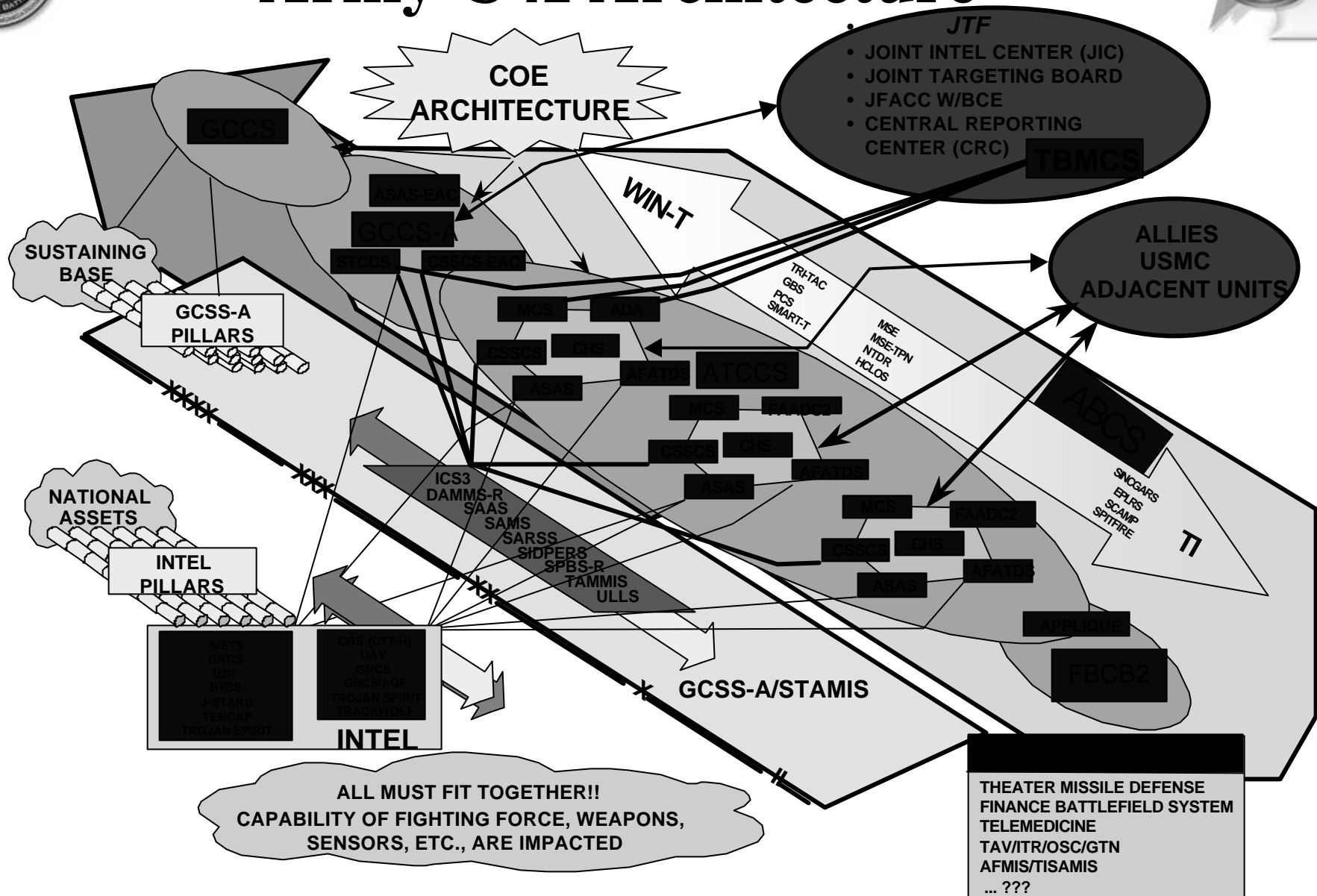
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11:31

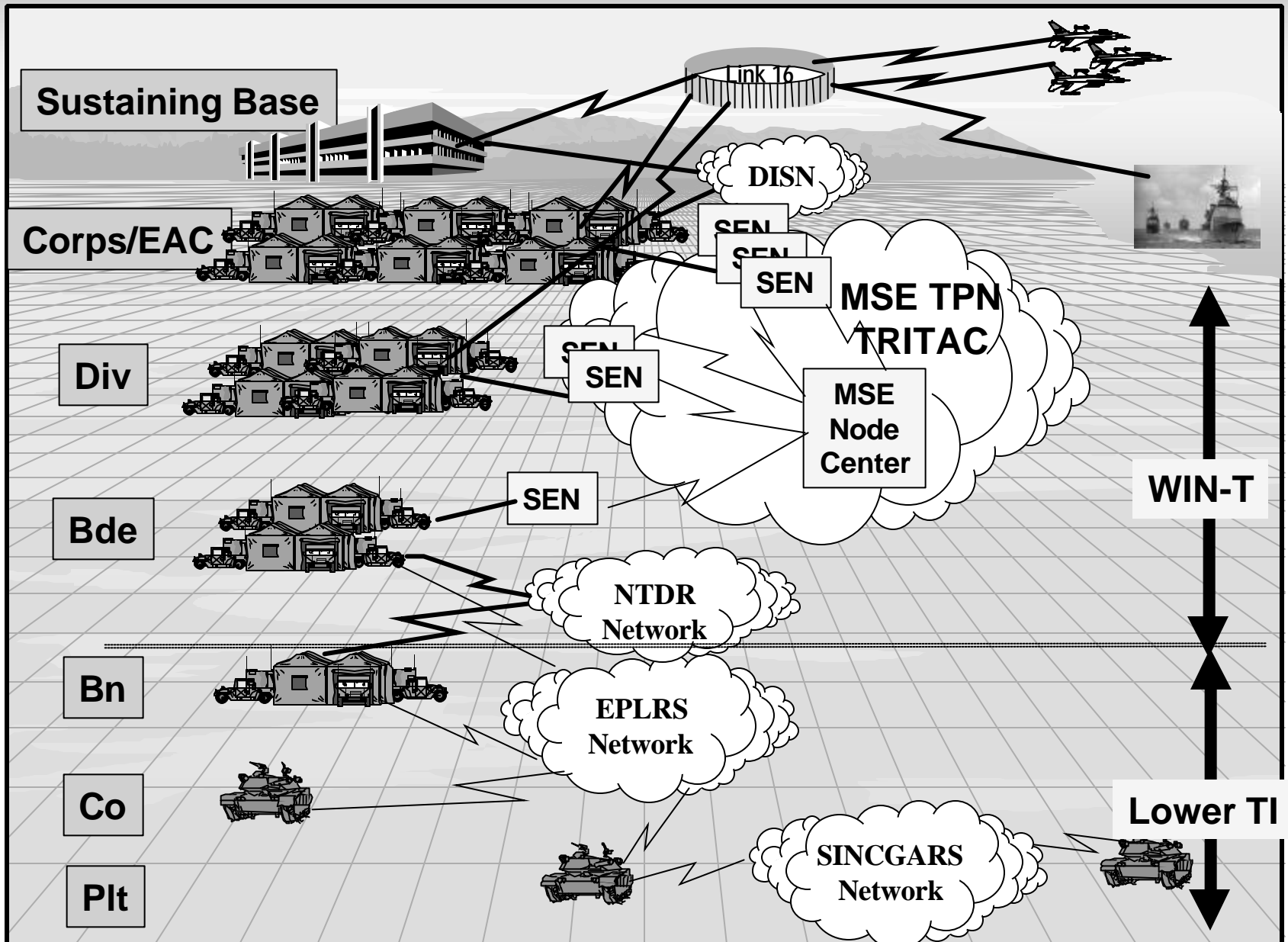




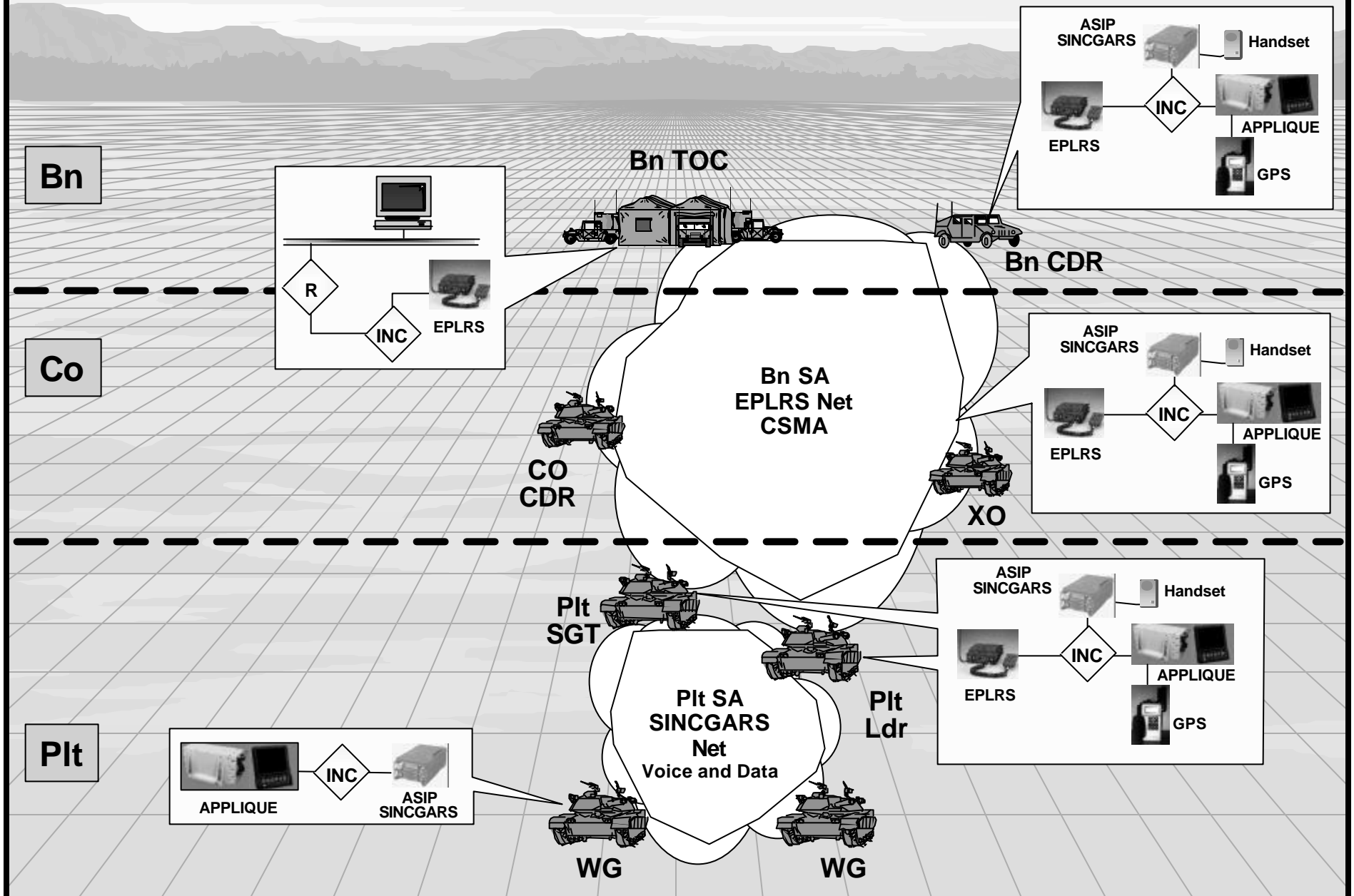
# Army C4I Architecture



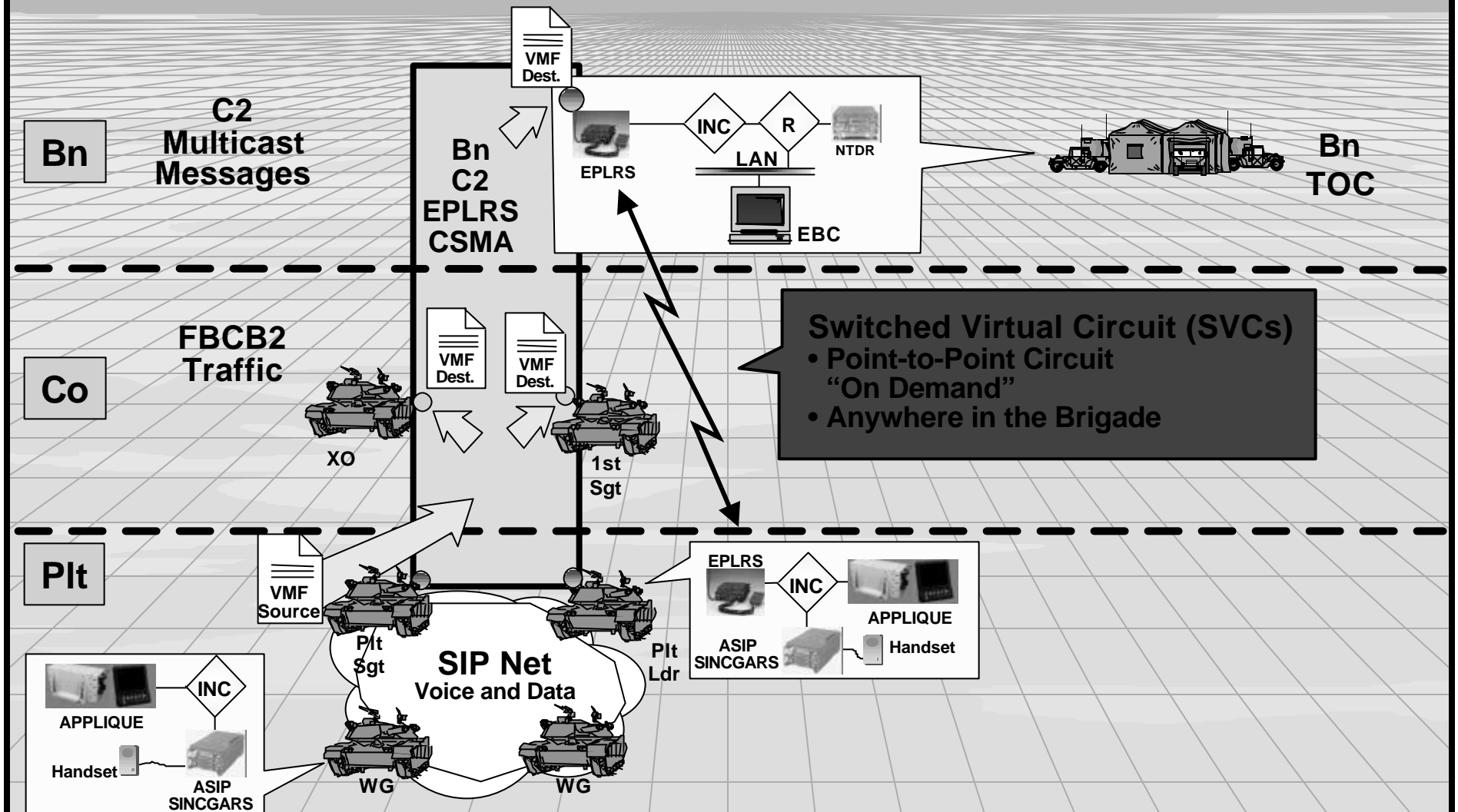
# Battlefield Communications Overview



# Situational Awareness (SA) Plt to Bn



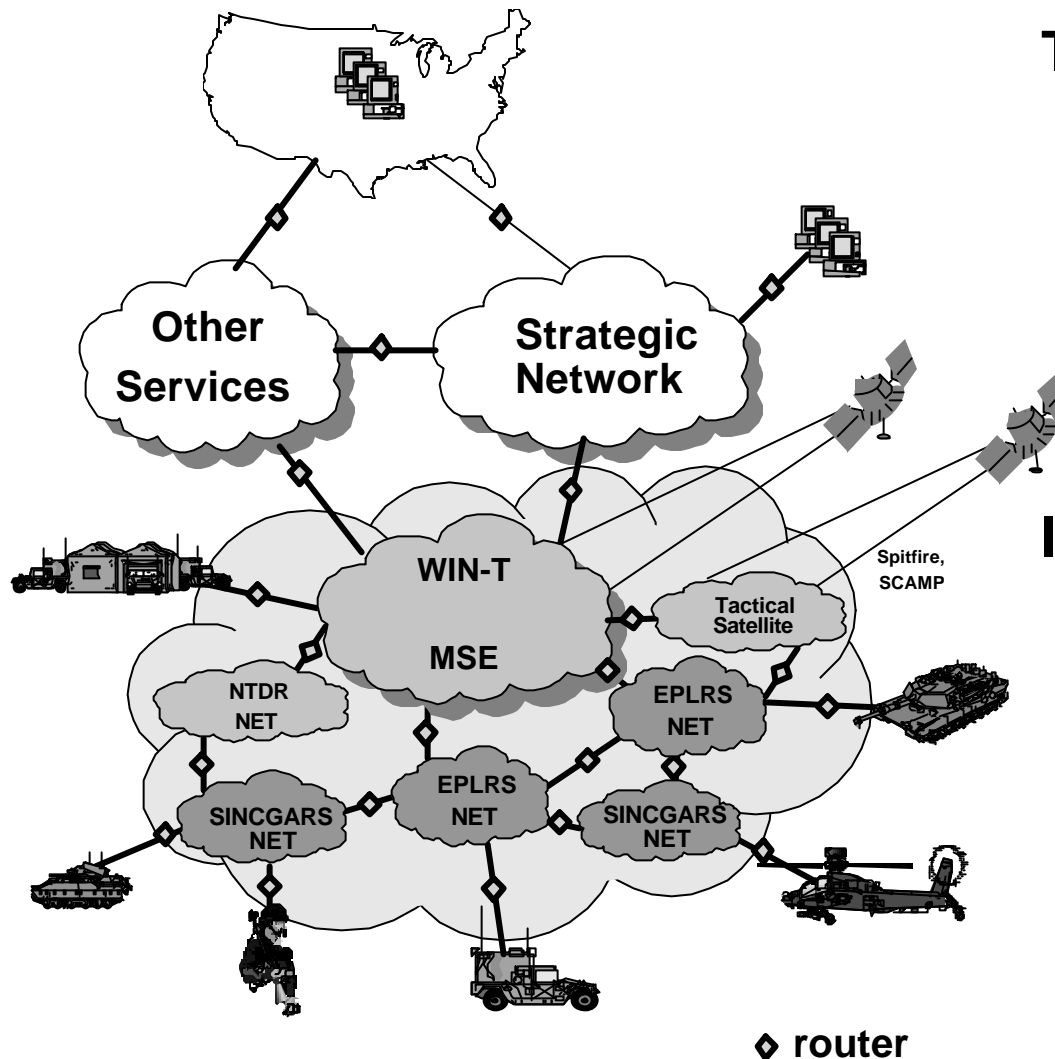
# C2 and TOC Messaging







# Tactical Internet



## Tactical

- Communications infrastructure at Corps and below
- Extends the architecture adopted by DISA and the Army at strategic levels

## Internet-based

- Based on the standards and architecture used in the Internet
- Internet Protocol (IP) suite
- Router-based architecture
- De facto commercial network standards and products





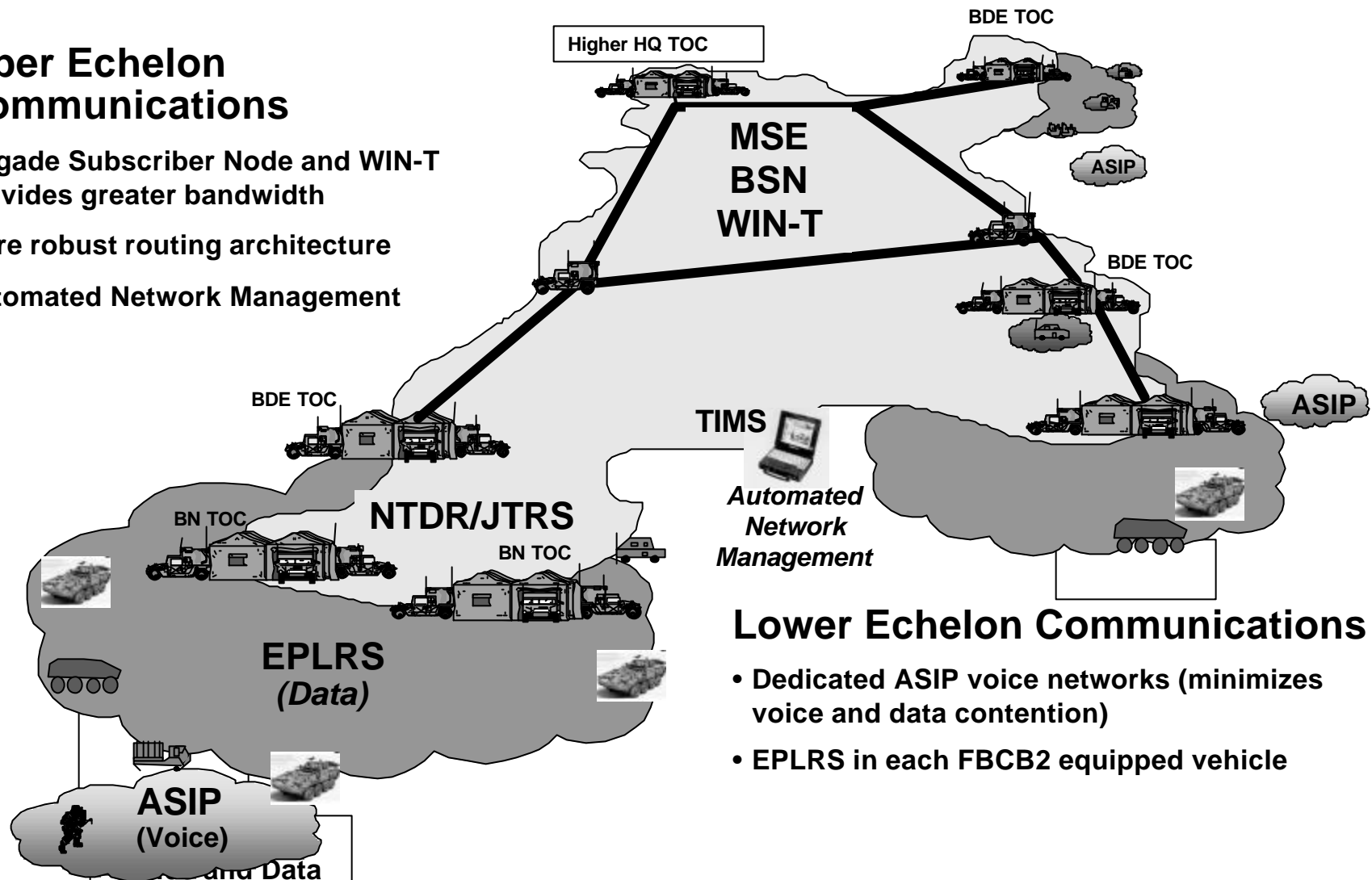
# Terrestrial Communications (Transformation)

Army  
Transformation

XXI

## Upper Echelon Communications

- Brigade Subscriber Node and WIN-T provides greater bandwidth
- More robust routing architecture
- Automated Network Management



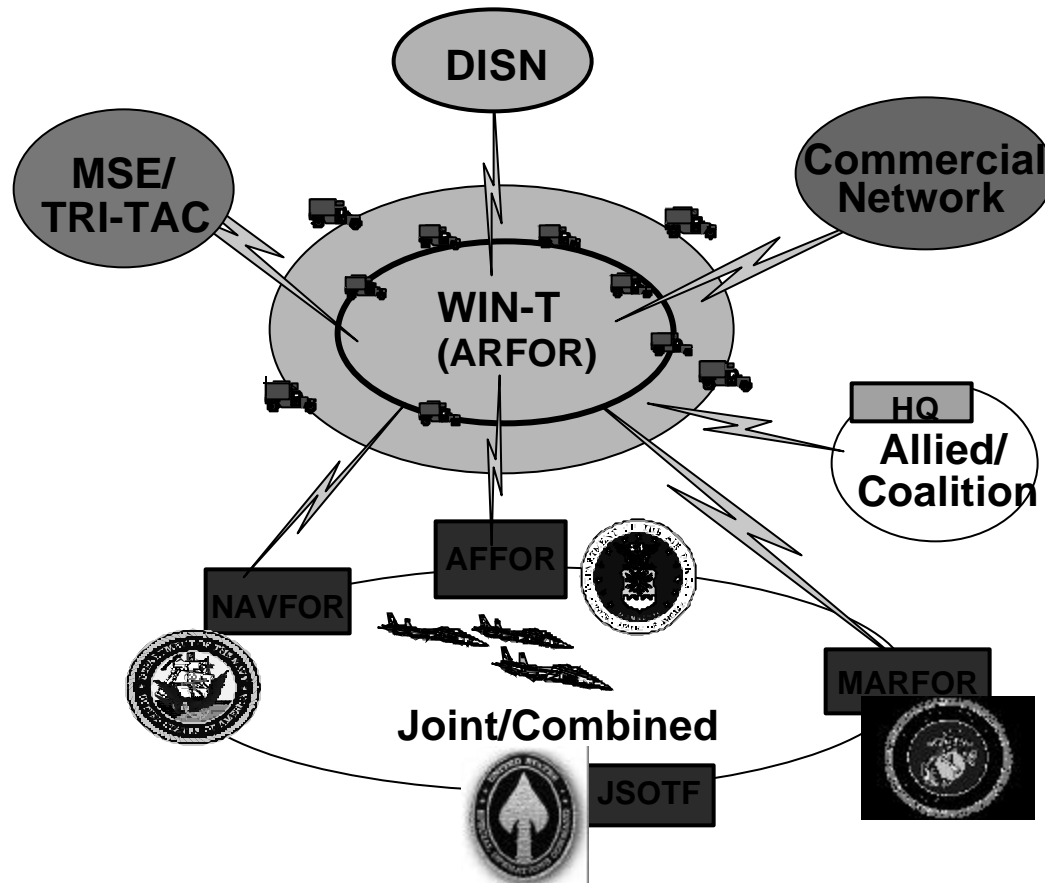
## Lower Echelon Communications

- Dedicated ASIP voice networks (minimizes voice and data contention)
- EPLRS in each FBCB2 equipped vehicle



# WIN-Tactical

## *“Transforming the Army”*



*.... an Army “Intranet” that provides mobile, secure, survivable, seamless multimedia connectivity between all elements within the battlespace*

- JTA Compliant
- Fully Interoperable with legacy, tactical, strategic, sustaining base, Joint, Allied and commercial networks
- Supports voice, data, and video at multiple security levels
- Provides coverage over extended battlespace
  - Division – 120 x 200 km
  - Brigade – 40 x 100 km
  - Battalion – 20 x 50 km
- Mobile platforms capable of providing network access at brigade and battalion level, to include operations on the move, on the pause and at the halt
- Equipment is capable of roll-on, roll-off operations on all transport aircraft



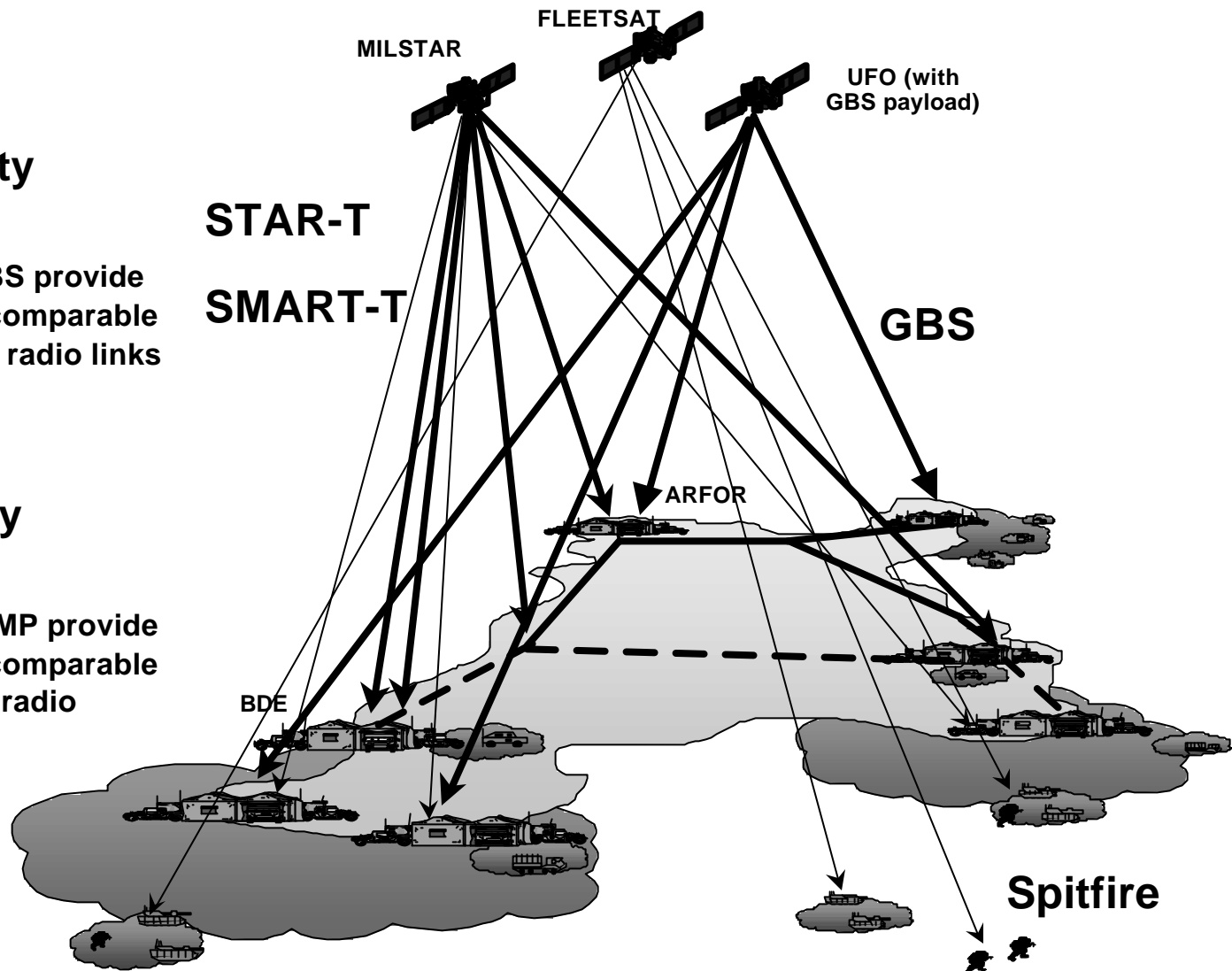
# Satellite Communications

## High-Capacity SATCOM

SMART-T and GBS provide link throughput comparable to upper echelon radio links

## Low Capacity SATCOM

Spitfire and SCAMP provide link throughput comparable to lower echelon radio nets/links





# DCX Backup



# Division Capstone Exercise I

## **“Bottom Line Up Front”**

**DCXI – Demonstrated the first “Network Centric” Army Battlefield**

**(1) Blue Forces had a decided advantage over the world class OPFOR -**

- Synchronized
- Faster
- Night Capable
- Integrated with CAS (F-16 & A-10)
- Leveraged JSTARS MTI (to AH-64D)

**(2) Materiel Developer must make improvements prior to DXCII**

- Graphics - MCS to FBCB2
- Network Robustness
- FBCB2/EBC Stability - Bradleys & Abrams



# Division Capstone Exercise

## What:

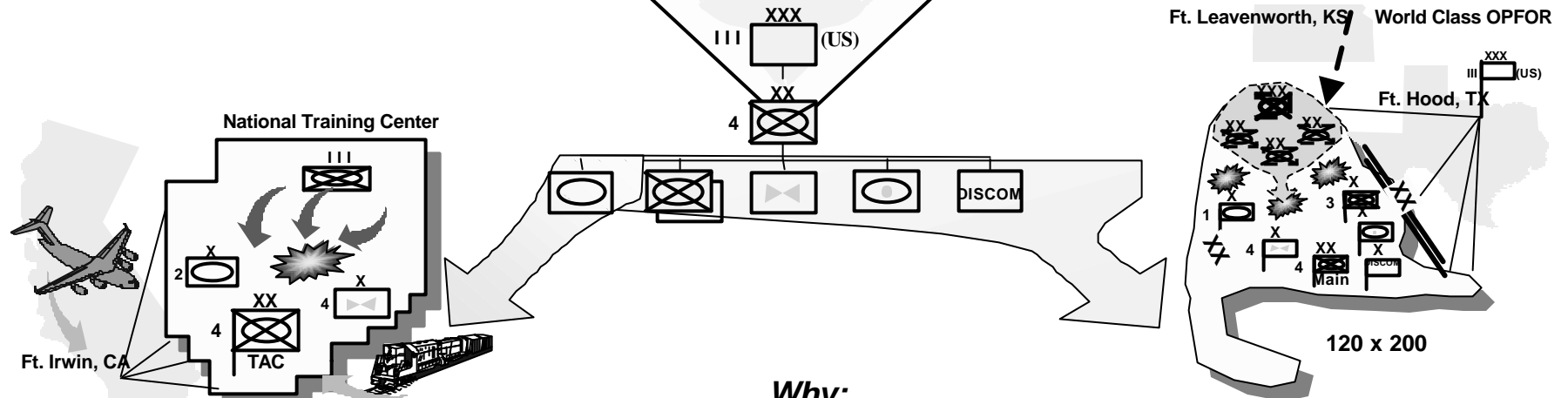
Demonstrate First Digitized Division in 01  
Demonstrate relevance of Heavy Force in NMS  
Demonstrate C2 systems functionality in a realistic environment

**DEMONSTRATE**  
4th Infantry Division's  
go-to-war capability  
under realistic and  
demanding force  
projection scenario.



## The Threat Environment: Adaptive

- Technical Insertions
- Some digitization
- Powerful across the spectrum
- Asymmetric Capable
- Robust combined arms units
- Tactically Flexible
- Well trained
- "Lives in the Box"



## Why:

- Secure support, with credible validation of Army's commitment to digitization
- Refine division O&O / design
- Answer previous/existing criticisms
- Provide comparative understanding of new force
- Demonstrate potential training methods of the future
- Demonstrate force effectiveness of FCB2

**MAR '01**

**OCT '01**



# DCX-1 Overarching Objectives

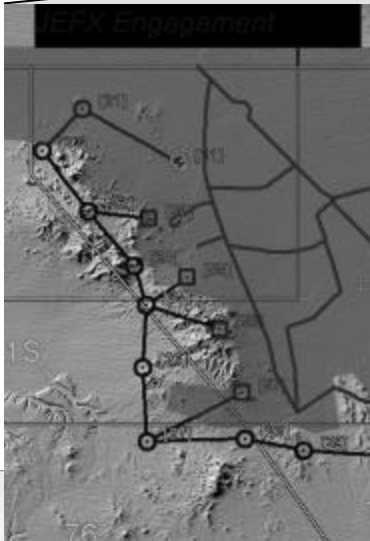
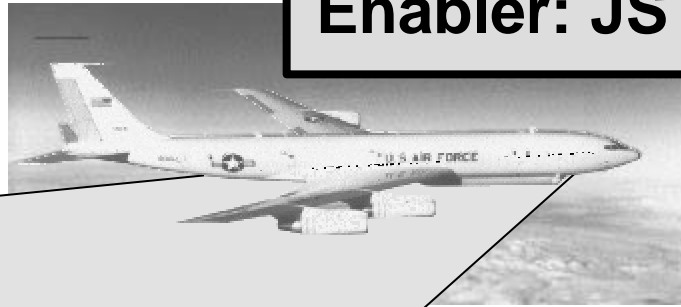
**- The Purpose of the Division capstone Exercise (Phase 1) was to demonstrate and assess the 4th ID's Mechanized Heavy and Aviation Brigades' ability to contribute decisively to III Corps' land campaign counteroffensive capability.**

## **7 objectives for the DCX**

- 1. Replicate a tough, demanding operational environment that will train the Mechanized Heavy and Aviation Brigades in their go to war METL.**
- 2. Assess the effectiveness of Battle Command enhancements at each echelon of the Brigades' formations**
- 3. Assess the Brigades' force effectiveness across the Battlefield Functional Areas**
- 4. Assess the Brigades' ability to employ information as a decisive element of combat power**
- 5. Determine the contribution of ABCS to the Brigades' warfighting effectiveness**
- 6. Determine DTLOMS refinements required for the brigade and below formations**
- 7. Protect the force during all phases of the exercise**

# JSTARS

**Enabler: JSTARS MTI to AH-64D**



- ★ JSTARS collects MTI
- ★ JSTARS passes MTI to AH-64D
- ★ MTI appears on AH 64D display



**Longbow Display**



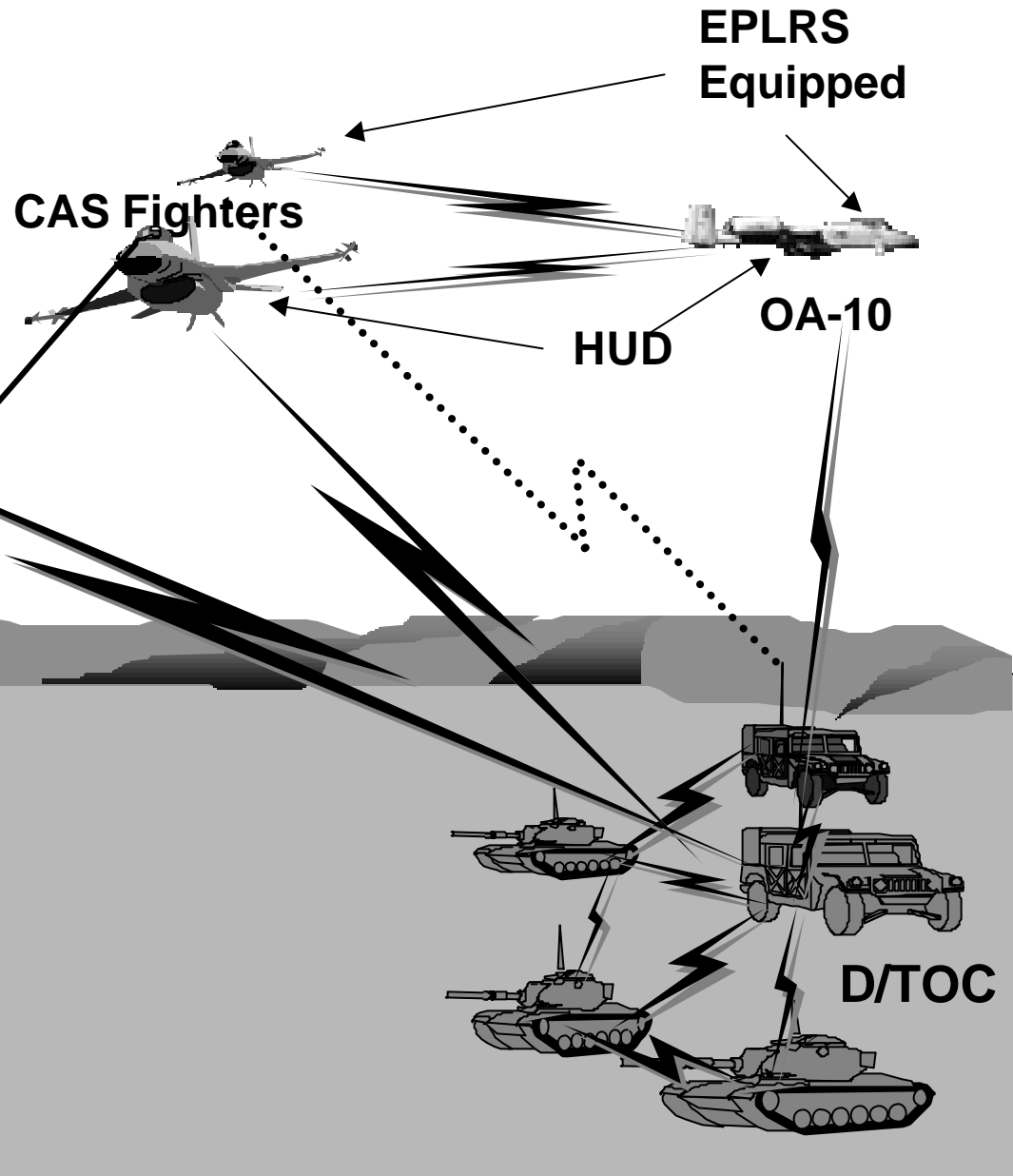
## "Scenario"

- UAV identifies targets
- Transmits location to UAV Ground-station which pushes to Air Force SADL (WINFAC) workstation
- WINDFAC pushes to F16s & A10s, Heads Up (HUD) display in Cockpit for execution



UAV FAC

## Enabler: F-16 & A-10s Link to UAV & CGS



## “Scenario”

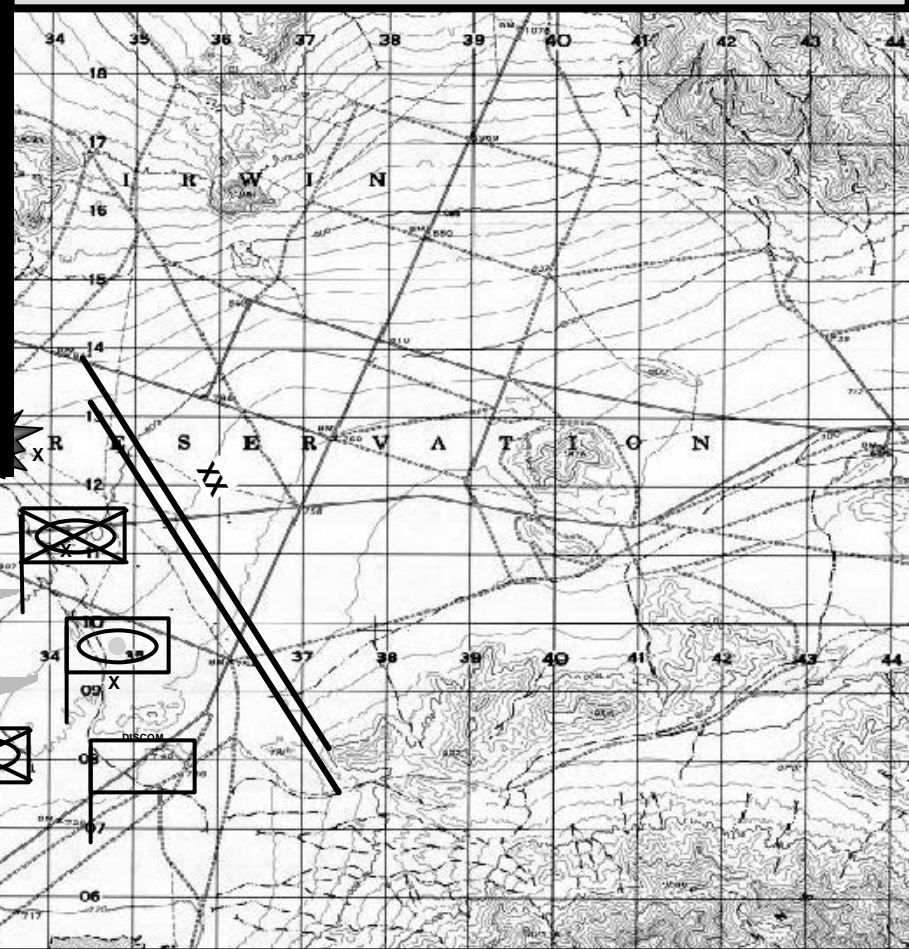
### Spoiling Attack –

- A platoon leader was given a mission to conduct Spoiling Attack.
- Without a prepared plan, platoon used current information on FBCB2 to identify routes which offered maximum cover and concealment. Platoon obtain excellent fire positions with superior line of site.
- Enemy caught off guard and completely destroyed.

## Enabler: FBCB2



**FBCB2**  
Force XXI Battle  
Command - Brigade  
and Below

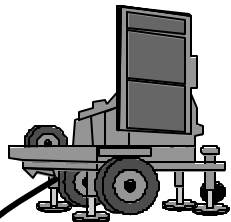
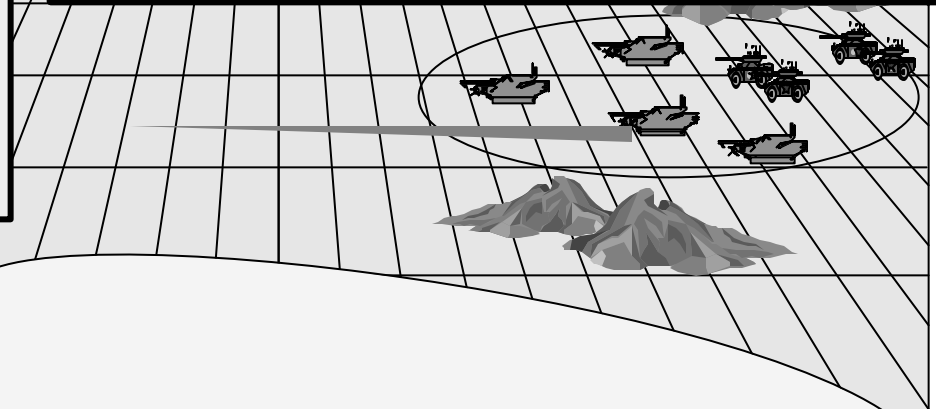


## "Scenario"

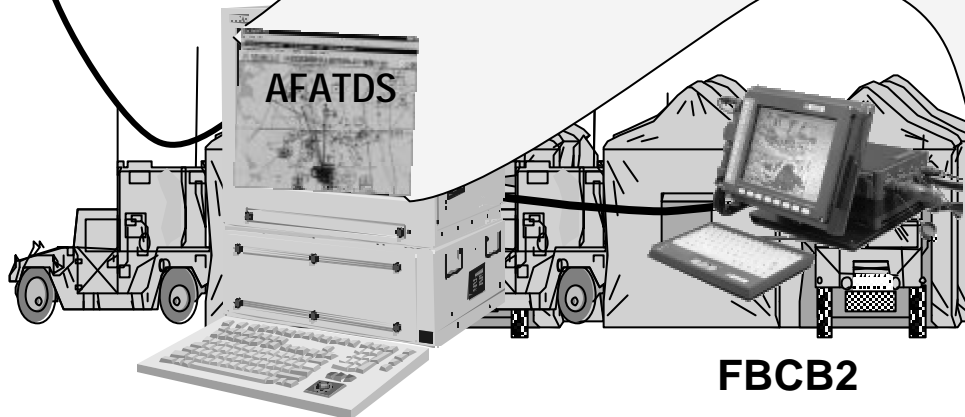
### On AFATDS-

- Red – Enemy Fires displayed
- Blue – Friendly Counter Fire displayed
- FBCB2 – Generated Blue SA displayed
- Div. Eng/Divarty CDR Assessment
- Located FASCAM before Firemarkers emplaced

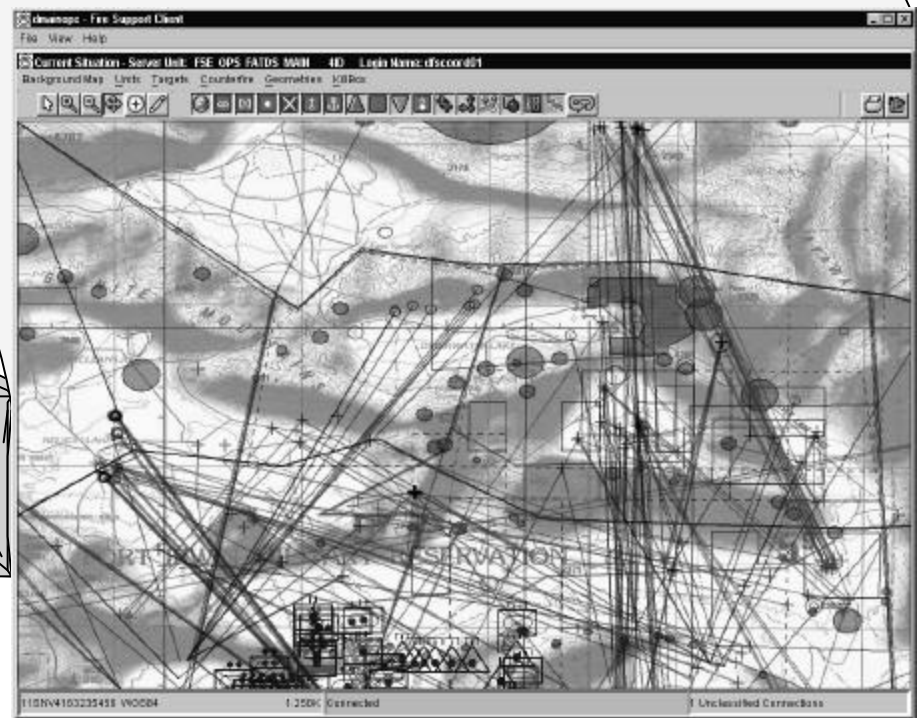
## Enabler: Networking Fires, Firefinder and FBCB2 Generated SA



Firefinder



FBCB2





# Summary

**At the Technical and Material level we are on a roadmap to carry the Army through the “Current Force” to the “Objective Force”**

**We are Networking the Battlefield!!!!**

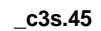
**Next STOP DCX II**



# Fire Support Backup



## XXI





Army  
Transformation

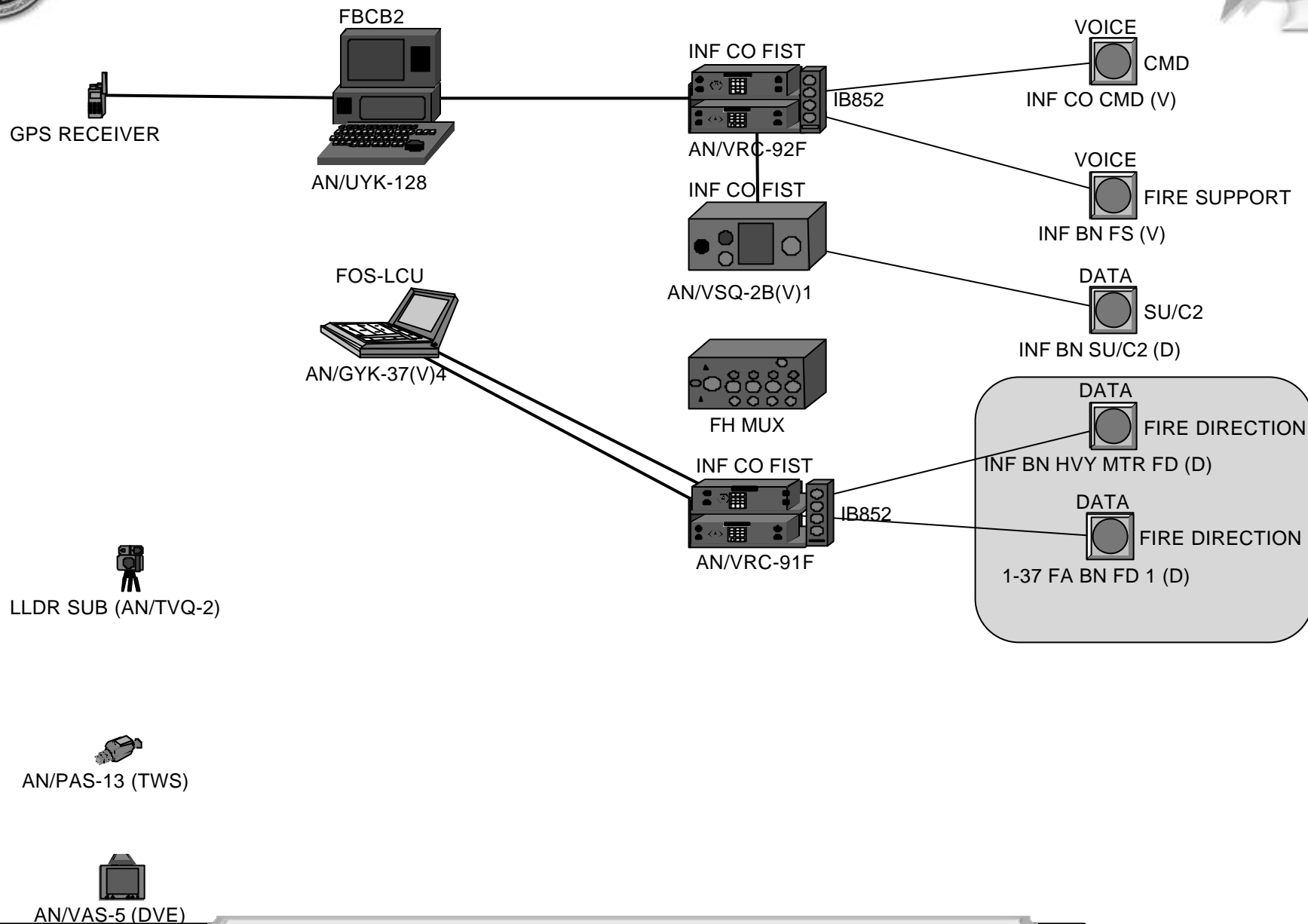
XXI



# INF CO FIST - IAV

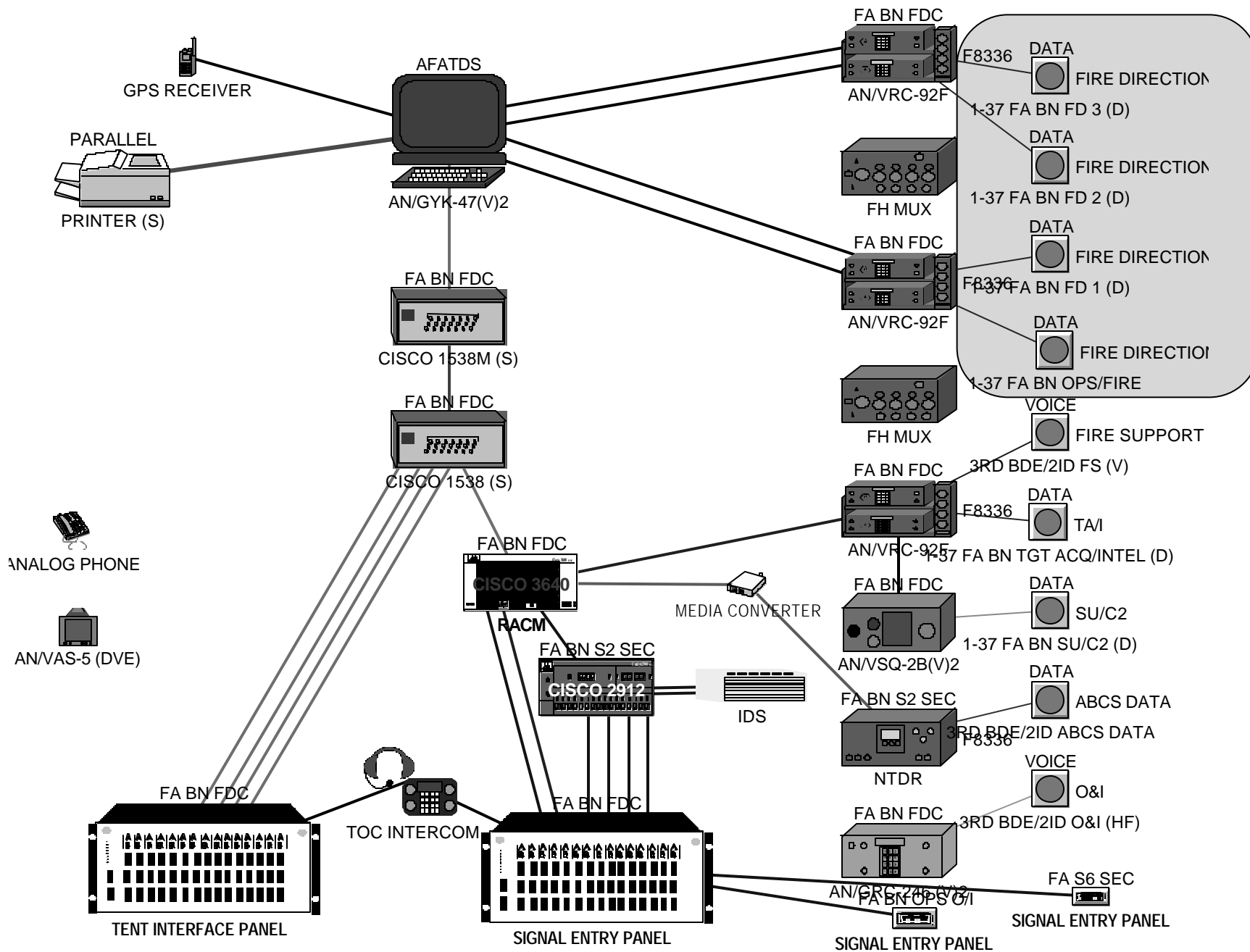
Army  
Transformation

XXI



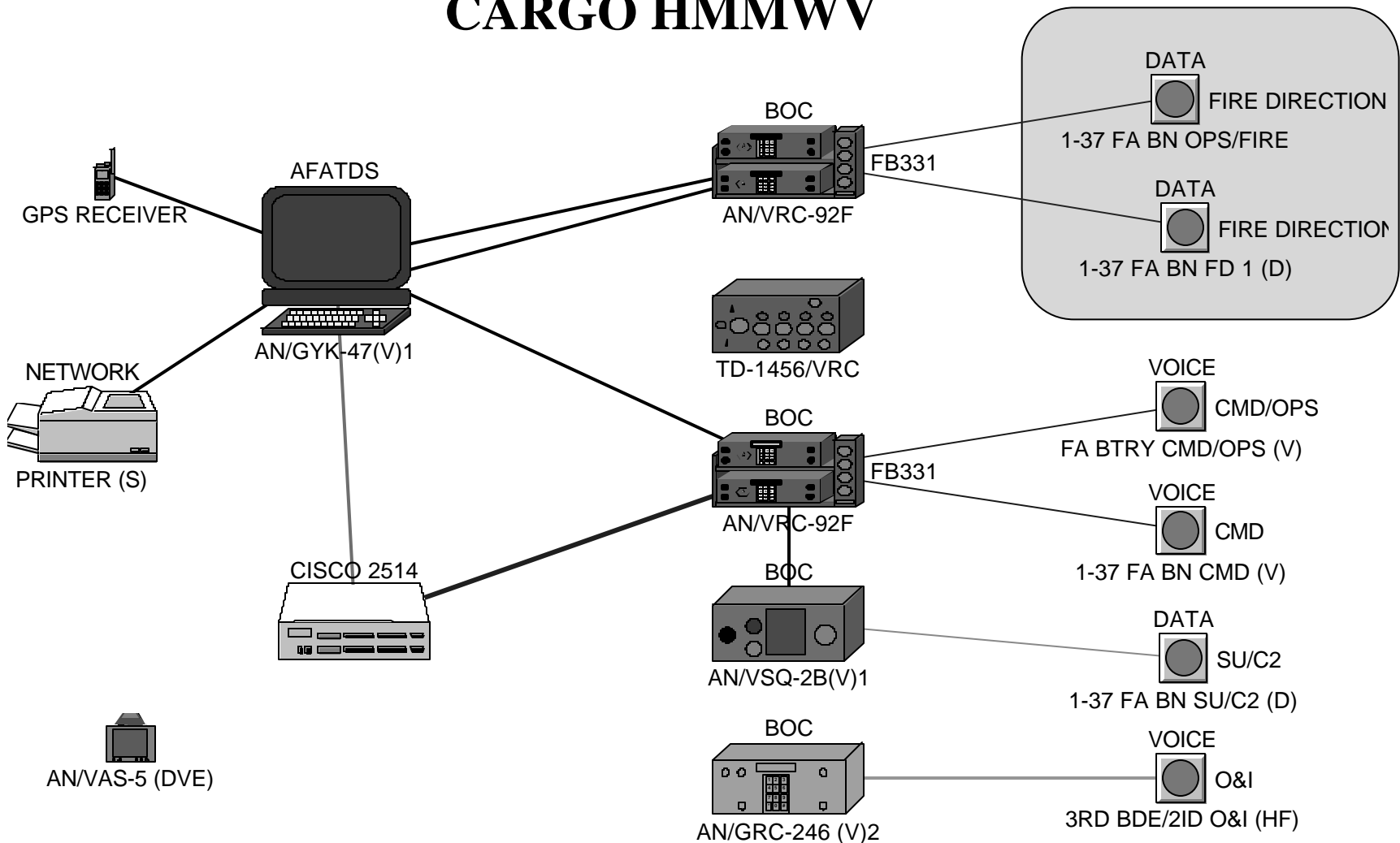


# 1-37 FA BN FDC – SICPS SHELTER





# BATTERY OPERATIONS CENTER (BOC) A/1-37 FA BN, CARGO HMMWV





# Other Backup



# Headquarters, Department of the Army

**Secretary of the Army**

**Deputy Under Secretary  
for International Affairs**

**Under Secretary  
of the Army**

**Deputy Under Secretary  
for Operations Research**

**Assistant Secretary  
Manpower &  
Reserve Affairs**

**Assistant Secretary  
Civil Works**

**Assistant Secretary  
Financial  
Management &  
Comptroller**

**Assistant Secretary  
Installation  
Logistics &  
Environment**

**Chairman  
Army Reserve  
Forces Policy  
Committee**

**Administrative  
Assistant**

**Director  
Small &  
Disadvantaged  
Business  
Utilization**

**Chief  
Public  
Affairs**

**Inspector  
General**

**Assistant Secretary  
Acquisition  
Logistics &  
Technology**

**General  
Counsel**

**Auditor  
General**

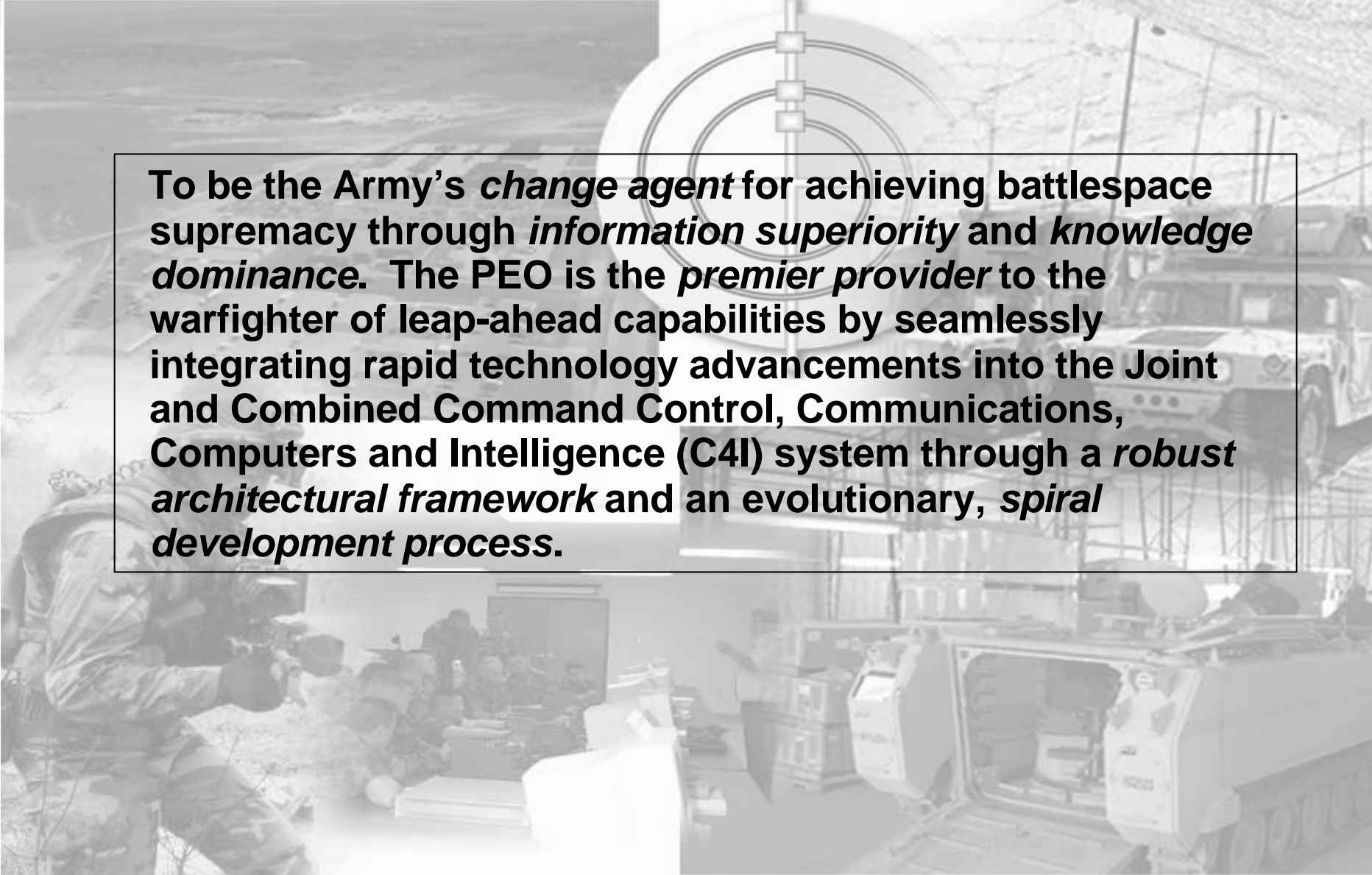
**Chief  
Legislative  
Liaison**

**Director  
Information  
Systems  
For C4**

**PEO C3S**


PROGRAM EXECUTIVE OFFICE COMMAND CONTROL AND COMMUNICATIONS SYSTEMS

# PEO C3S Vision Statement



To be the Army's *change agent* for achieving battlespace supremacy through *information superiority* and *knowledge dominance*. The PEO is the *premier provider* to the warfighter of leap-ahead capabilities by seamlessly integrating rapid technology advancements into the Joint and Combined Command Control, Communications, Computers and Intelligence (C4I) system through a *robust architectural framework* and an evolutionary, *spiral development process*.

# PEO C3S Mission Statement



**To rapidly develop, field, and support leading edge, survivable, secure and interoperable tactical, theater and strategic command and control and communications systems through an iterative, spiral development process that results in the right systems, at the right time and at the best value to the warfighter.**

***“System Architect for Tactical Army”***



# Acronym Definitions

## Acronym

A2C2

A2C2S

ABCS

ACN

ACTD

ACUS Mod

ADA

AFATDS

AKMS

AMDCCS

AMDPCS

AMDWS

AMPS

AOE

## Definition

Army Airspace Command and Control

Army Airborne Command & Control System

Army Battle Command System

Airborne Communications Network

Advanced Concept Technology Demonstration

Area Common User System Modernization

Air Defense Artillery

Advanced Field Artillery Tactical Data System

Army Key Management System

Air and Missile Defense Command and Control System

Air and Missile Defense Planning and Control System

Air and Missile Defense Work Station

Aviation Mission Planning System

Army of Excellence

## Acronym

ARFOR

ARI

ASAS

ATC

ATCCS

ATEC

ATM

ATO

AWE

BCS

BCT

BDE or Bde

BFA

BFIST

BN or Bn

BPV

BSN

C2

C3I

C3S

## Definition

Army Forces

? Newsletter

All Source Analysis System

Army Test Center

Army Tactical Command and Control System

Army Test and Evaluation Center

Asynchronous Transfer Mode

Air Tasking Order

Advanced Warfighter Experiment

Battery Computer System

Brigade Combat Team

Brigade

Battlefield Functional Area

Bradley Fire Support Team

Battalion

Battle Planning and Visualization

Brigade Subscriber Node

Command and Control

Command, Control, Communications and Intelligence

Command, Control and Communications Systems



# Acronym Definitions (*Cont*)

<u>Acronym</u>	<u>Definition</u>	<u>Acronym</u>	<u>Definition</u>
C4I	Command, Control, Communications, Computers, and Intelligence	CSA	U.S. Army Chief of Staff
C4ISR	Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance	CSS	Combat Service Support
CBS	Corps Battle Simulator	CSSCS	Combat Service Support Command and Control System
CCU	Compact Computer Unit	CTSF	Central Technical Support Facility
CECOM	US Army Communications- Electronics Command	DAWE	Division AWE
CGS	Common Ground System	DCX	Division Capstone Exercise
CHIMS	Combat Intelligence/Human Intelligence Information Management System	DII	Defense Information Infrastructure
CHS	Common Hardware System	DIICOE	DII Common Operating Environment
CI/HUMINT	Combat Intelligence/Human Intelligence	DISN	Defense Information System Network
CMP	Common Message Processor	DIVARTY	Division Artillery
CO or Co	Company	DIVENG	Division Engineers
COE	Common Operating Environment	DMS	Defense Message System
COP	Common Operating Picture	DSA	Deputy for Systems Acquisition
CTIS	Combat Terrain Information System	DTAC	Division Tactical Command Post
CTP	Common Tactical Picture	DTSS	Digital Topographic Support System
CSEL	Combat Survivor Evader Locator	DUSA (R)	?
		EAC	Echelons Above Corps
		EBC	Embedded Battle Command
		EHF	Extremely High Frequency
		ELB	Extended Littoral Battlespace
		EPG	Electronic Proving Ground
		EPLRS	Enhanced Position Location Reporting System





# Acronym Definitions (*Cont*)

<u>Acronym</u>	<u>Definition</u>	<u>Acronym</u>	<u>Definition</u>
FAADC2	Forward Area Air Defense Command and Control	IBCT	Initial Brigade Combat Team or Interim Brigade Combat Team
FATDS	Field Artillery Tactical Data Systems	ICS	? - Base Operations
FBCB2	Force XXI Battle Command Brigade and Below	IFSAS	Initial Fire Support Automated System
FED	Forward Entry Device	IMETS	Integrated Meteorological System
FHMUX	Frequency Hopping Multiplexer	INC	Interface Network Card
FM	Frequency Modulation	IP	Internet Protocol
FO	Forward Observer	ISYSCON	Integrated System Control
FOS	Forward Observer System	ITRT	Individual Tactical Reporting Tool
FSAC	Fire Support Ada Conversion	JANUS/STORM	Joint Army Navy Uniform Simulation/Simulation, Testing, Operations and Rehearsal Model
FSE	Fire Support Element		
GB	Gigabyte	JCF AWE	Joint Contingency Force AWE
GBS	Global Broadcast Service	JCDB	Joint Common Database
GCCS-A	Global Command and Control System – Army	JRTC	Joint Readiness Training Center
GCSS-A	Global Combat Service Support - Army	JTA	Joint Technical Architecture
HCLOS	High Capacity Line of Sight Radio	JTIDS	Joint Tactical Information Distribution System
HCU	High Capacity Unit	JTRS	Joint Tactical Radio System
HTU	Handheld Terminal Unit	JVMF	Joint Variable Message Format
HW	Hardware	KM or km or Km	Kilometer



# Acronym Definitions (*Cont*)

## Acronym

LAN

LCU

LDR

LFED

LNO

LOGSTAT

MARFOR

MB

MBC

MC02

MCE

MCS

METT-TC

MFCS

MHz

MI ACT

MIDS

MILSATCOM

MSE

MTS

## Definition

Local Area Network

Lightweight Computer Unit

Low Data Rate

Lightweight Forward Entry Device

Liaison Office

Logistics Status

Marine Forces

Megabyte

Mortar Ballistic Computer

Millennium Challenge 2002

Maneuver Commander's Environment

Maneuver Control System

?

Mortar Fire Control System

MegaHertz

Military Intelligence Analysis  
and Control Team

Multifunction Information Distribution  
System

Military Satellite Communications  
Systems

Mobile Subscriber Equipment

Movement Tracking System

## Acronym

NAVFOR

NBC

NCU

NSC

NTC

NTDR

PCS

PEO

PD

PLT

PM

OP

OPFOR

OPLAN

OPORD

OPTEMPO

R&D

ROK

S&T

SA

SATCOM

## Definition

Navy Forces

Nuclear, Biological & Chemical

Notebook Computer Unit

National Simulation Center

National Training Center

Near Term Digital Radio

Personal Communications System

Program Executive Officer

Project Director

Platoon

Project Manager

Observation Post

Opposing Forces

Operations Plan

Operations Order

Operations Tempo

Research and Development

Republic of Korea

Science and Technology

Situational Awareness

Satellite Communications



# Acronym Definitions (*Cont*)

<u>Acronym</u>	<u>Definition</u>	<u>Acronym</u>	<u>Definition</u>
SCAMP	Single Channel Anti-jam Manportable Terminal	TMD	? An exercise
SCOTT	Single Channel Objective Tactical Terminal	TPN	Tactical Packet Network
SECOMP	Secure Enroute Communications Package	TOC	Tactical Operations Center
SEN	Small Extension Node	TRAC	TRADOC Analysis Center
SICPS	Standard Integrated Command Post System	TRADOC	US Army Training and Doctrine Command
SINCGARS	Single Channel Ground and Airborne Radio System	TRCS	Tactical Radio Systems
SMART-T	Secure Mobile Anti-jam Reliable Tactical Terminal	TRITAC	Tri-Service Tactical Communications System
SOTM	Satellite On The Move	TTP	Training, Tactics, and Procedures
STAR-T	Super High Frequency Tri-band Advanced Range Extension Terminal	TUAV	Tactical UAV
STRICOM	Simulation, Training and Instrumentation Command	USAF	United States Air Force
SVR	Server	UAV	Unmanned Aerial Vehicle
SW	Software	USMC	United States Marine Corps
TACFIRE	Tactical Fire Direction System	USN	United States Navy
TAIS	Tactical Airspace Integration System	VCU	Versatile Computer Unit
TIDAT	?	VF MED	?
TCU	Tactical Computer Unit	WARSIM	Warfighters Simulation 2000
THSDN	Tactical High Speed Data Network	WIN-T	Warfighter Information Network – Tactical
TI MGR	Tactical Internet Manager		or
TIMS	Tactical Internet Manager System	WSMR	Warfighter Information Network – Terrestrial
			White Sands Missile Range